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Promoting digital media literacy for the best quality of music performance

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Upon the 21st century, media educators have focused on audio-visual media such as newspaper, television or film, and neglected the educational need for music as a medium. Music is the important channel of students to form their unique identity and define their inner being, history, and emotions, as other audio-visual media provide the platform for that. The negligence toward music in media education has been compensated by research conducted for the media use in music education. However, most of the studies were about gaining musical knowledge more effectively, music composition through digital media and creating the online community of practice for students to form their musical identity. As media education emphasizes, expressing one's emotions, identity and their message in an effective way is highly important, and in terms of the medium of music, people express and empower themselves through music performance.

This action research aimed to discover the effective digital media use to promote the best quality of music performance by conducting and analyzing from the perspective of flow theory and music performance anxiety. This project-based action research was conducted by two participants as co-researchers and main researcher preparing and performing a concert to gather qualitative data, such as personal in-depth interview, research diary, audio records and video records. Then, the framework analysis method was used to describe, analyze and synthesize the result. The findings derived from the framework analysis describes that the personal and collective use of digital recording device and digital media contents such as YouTube videos were highly effective to promote flow experience and reduce the debilitative music performance anxiety level. However, poor quality of the microphone and speaker system on the stage caused the debilitative music performance anxiety for all band members consisting of two co-researchers and the main researcher.

By reflecting this research, following groups can be beneficiaries to increase their expertise and reveal the musical identity more effectively: media educators, music educators, amateur musicians and students taking music classes in public school or privately.

Key words: media education, media literacy, flow, music performance anxiety, music performance, music education, YouTube

CONTENTS

1 INTRODUCTION

Throughout the history, media educators have concentrated on audio-visual media, such as newspaper, television or film. This trend has been proliferating for many decades since 1940's and still occupying. Media educators also have traditionally focused on harmful effects of audio-visual media contents. Variety of methods to prevent these harmful effects were created and used by media educators whose main purpose was to protect children from being exposed to distorted images and messages. Upon the millennium and closer to 2010's, media educators began to pay attention to both protecting and empowering students. It became one of major aim of media education to promote media skills of students and to empower them to create media contents by using variety of digital media devices such as camera, camcorder, cellphone or laptop. Creating and producing media contents and building their identities as a media prosumer have been more emphasized. (Hobbs & Moore, 2013.)

Meanwhile, very few researchers conducted the study from the perspective of music in media education discipline until the millennium era. According to Richards (2012), media education inconsistently has engaged with popular music throughout the history, which has turned out to be long periods of explicit neglect. As Richards (2012) insists, "this neglect is paradoxical: while claiming to engage the cultural interests of young people, media teachers have effectively marginalized a medium central to the lives of a large majority of them" (p. 3). Music is the channel of students to associate with other friends and people, express their emotions and values and form their own unique identity. Listening to music can also play an essential role when it comes to defining one's inner being, histories and emotions.

Since 2007, several researchers published articles about critically analyzing the message of hip-hop music lyrics and visual contents of music videos (Chung, 2007; Robillard, 2012; Kelly 2016; Flynn, Craig, Anderson & Holody, 2016). These articles described the harmful effect of hip-hop music lyrics and music videos from the perspective of mental health, racism and sexism, and suggested that media education and critical media literacy can solve the problem.

Unfortunately, there is still little research about music in the domain of media education when it comes to producing media contents and delivering own messages. Most of the research about

media use or media literacy concerning music has been conducted in the field of music education. Even though the purpose of music education studies has mostly been to discover and describe the media use in music education, it is still worth to reflect the findings and try applying to promote the media literacy and production.

After doing the literature review, it is discovered that there are three different major research aims for studies in music education when it comes to using media.

1) Gain musical knowledge more effectively by using media such as Internet or social media (Ö ztosun, 2016; Pećanac, Jeremić & Milenović, 2016)
2) Use media device and software to encourage students to compose their own music easily (Croft, 2007; Challis, 2007; Jennings, 2007)
3) Use online platform (Mikseri, YouTube) as a community of practice where students comment, give feedbacks and share ideas; this platform eventually helps students to form the musical identity (Albert, 2015; Partti & Karlsen, 2010)

However, few studies have been conducted regarding music performance from the perspective of media literacy. Performing and playing music in a flow state can encourage students to emancipate themselves from self-consciousness and encouraging them to express themselves freely through music. Enabling students to express themselves more freely is important in the era of fragmentation of audience. In the era of abundant digital media contents, audience can choose all media contents to consume according to their preference. In this case, user-generated contents can expand the spectrum of media contents. Also, user-generated contents (UGC) can also facilitate the establishment of community of practice on the cyberspace by initiating the interaction between users.

In this study, finding the way to use media to promote the best quality of performance is the most important aim. Musicians and students with musical interests will be able to produce media contents, deliver their message and revealing their musical identity more effectively by reflecting the result of this thesis.

2 LITERATURE REVIEW

In the history of media education research, the protectionist approach has the biggest influences on scholars (Kupiainen, 2011). Studies conducted by following this approach has goals to discover "some correlation between media content and children's behaviours" (Kupiainen, 2011; p. 339). The same approach affected the direction of recent research concerning music contents in media education field. Researchers attempted to discover the relationships between music content and student's behavior such as having poor self-image and sexist opinions.

In the literature review part, first, recent media literacy studies concerning explicit music videos and music lyrics are discussed. Then, music education studies concerning media use are introduced, since there is no media literacy studies concerning music production.

2.1 Media literacy research in consuming music contents

As stated above, recent research trend is raising awareness of people to protect students from the harmful effect of explicit music videos and music lyrics. Studies of music video had been conducted earlier than studies of music lyrics.

2.1.1 Media literacy research concerning music videos

In the millennium era, hip-hop culture attracts growing numbers of adolescents from diverse national backgrounds, and hip-hop singers and performers on media act as a role model for teenagers in terms of fashion, behavior and speaking style (Chung, 2007).

Entering 2010's, several groups, such as "The Girls, Women + Media Project", "Essence magazine" and the American Academy of Pediatrics, have increased worriness over the reflection of femininity in music videos and its influence on women (Robillard, 2012). According to Robillard

(2012), music videos often show sexual content portraying women as “promiscuous, submissive, or passive” (p. 1).

Some studies discovered by conducting content analyses that there are significant gender differences in music videos. (1) women took less leading roles and act more likely as a dancer or a model. (2) men initiate crucially more violent, aggressive and dominant acts. (3) women are portrayed to be caring, passive and dreadful, and behave more passively and obediently than men. (4) women are characterized by their more revealing clothes and being sexually and aggressively advanced by men (Robillard, 2012). “The sexist lyrics, images, and scenarios in hip-hop music videos are alarming because they perpetuate gender stereotypes and discrimination” (Chung, 2007; p.35).

According to the cultivation theory, the frequent exposure toward media content can cultivate the social role and gender role of viewers in the way that the content gravitates toward, because a large amount of watching media contents is related to a tendency to form limited perceptions of reality (Robillard, 2012; Gerbner, Gross, Morgan, Signorielli & Shanahan, 2002). Hence, the sexually explicit images and implication in music videos may have an influence on sustaining the sexism, gender discrimination and poor sexual self-protection.

By conducting surveys, Robillard (2012) proved that the amount of watching negative portrayals of women in music videos are associated with perceived personal influence (e.g. the way of dressing, the way of acting around men) and low self-efficacy for using condoms.

The importance of critical media literacy to mediate the harmful effect of hip-hop music videos was accentuated in both Robillard’s (2012) and Chung’s (2007) article. Through critical discourses, teenagers can be educated to understand how gender discrimination and power game are sustained in hip-hop music videos. Critical media literacy will also help them to gain critical point of view to make discrete decisions as media consumers and sexually active individuals.

2.1.2 Media literacy research concerning music lyrics

As visual representations in music video affects viewer’s perception of society and gender roles, music lyrics have an influence on people’s thoughts, empathy and behavior (Greitemeyer, 2009). Indeed, since listeners memorize and sing aloud the music lyrics, they could be more influenced by music lyrics than visual representations in music videos in terms of forming social bondings (Flynn, Craig, Anderson & Holody, 2016).

Accrording to Flynn et al. (2016), in music lyrics, the frequency of body objectification increased over the last decades, and it has been most pervasive in the genre of Rap and R&B/Hip-hop. The long periods of exposure to media contents containing sexual objectifications can lead to several negative results, for example, poor body satisfaction, increasing sadness and more acceptance of sexual violence (Aubrey et al., 2011; Mulgrew et al., 2014).

In order to mitigate the negative effects of body objectification, media literacy can be used as an educational strategy supported by empirical studies. Media education courses can be organized to prepare teenagers and young adults to analyze objectification in music lyrics and consume music contents critically (Flynn et al., 2016). According to the case study conducted by Kelly (2016), her student Sonya could learn about "deconstructing texts and analyzing power" throughout the media literacy course (p. 534). In addition, Sonya could understand the influence of hip-hop in "her social development and identity formation" (Kelly, 2016; p. 535).

2.2 Music education research in terms of media use

Even though there are some music studies conducted from the perspective of media literacy, the aim of those studies was limited to analyze the influence of message and contents of hip-hop and R&B music. Protectionist approach emphasizing critical media literacy were prevailing after 2000's, but it is still difficult to find the research of media production/media use aiming for empowering students to create their own messages.

However, several researchers conducted studies concerning media use from the music education perspective (Öztosun, 2016; Pećanac, Jeremić & Milenović, 2016; Croft, 2007; Challis, 2007; Jennings, 2007; Albert, 2015; Partti & Karlsen, 2010). Since those studies have meaningful implications from the perspective of media education as well, I describe and explain three major categories here: gain musical knowledge by using media, use media device and software for music composition and use online platform as a community of practice.

2.2.1 Gain musical knowledge by using media

Several researchers focused on researching how to gain musical knowledge more effectively by using media such as Internet or social media (Ö ztosun, 2016; Pećanac, Jeremić & Milenović, 2016). The study conducted by Ö ztosun (2016) describes how Facebook has been used by music

department students in their education when it comes to gaining and evaluating knowledge. The majority of subjects responded that they acquired new musical skills and gained self-development through Facebook. New musical applications were also accessible for students through Facebook. Participating music events posted on Facebook allowed students to come up with new ideas applicable to new works (Ö ztosun, 2016).

According to the study conducted by Pećanac, Jeremić & Milenović (2016), students learning with the aid of digital media accomplish significantly better academic results in musical literacy compared to the students learning in the traditional way without using media. Digital media motivated students to pursue their own learning, and provided them with the sense of control, safety and satisfaction. As a result, the use of digital media in music class had a significant positive effect on knowledge acquisition (Pećanac, Jeremić & Milenović, 2016).

2.2.2 Use media device and software for music composition

Several studies have been conducted to discover the effectiveness of using the media device and software to encourage students to compose music more easily (Croft, 2007; Challis, 2007, Jennings 2007). For students who did not have any experience for playing musical instruments or singing, the procedure of music composition with pen and paper can be really challenging (Challis 2007). Students are far more motivated from using music composition software than composing in the traditional way (Croft, 2007; Challis 2007).

Music composition software could help students to become absorbed into the procedure by providing small achievable steps for students (Croft, 2007). For instance, students can start the composition by putting in beats of drum sound, and then add brass sound. Software program also can allow students to focus on beat first, rhythm and melody step by step.

Immediate meaningful feedback can be provided for students through software program, which enables them to set up the proximal goals again (Croft, 2007). The playback function provides the convenience to review what students have composed by listening to their own compositions. Feedback assist students to have the meta-cognition to control their own learning progress, and eventually motivate students to be more creative following their own interests.

DJ software program helped students to be motivated to combine their composition with commercial music (Challis, 2007). Then, they could compare the quality of their compositions with the one of commercial music, and feel the sense of accomplishment which improves student's motivation (Challis, 2007).

2.2.3 Use online platform as a community of practice

Several scholars in music education aimed to discover the use of online platform (Mikseri, YouTube) as a community of practice where students comment, give feedbacks and share ideas; this platform eventually helps students to form the musical identity (Albert, 2015; Partti & Karlsen, 2010).

According to Partti and Karlsen (2010), Mikseri is an online community of practice where musicians communicate musical ideas, upload their own performance/compositions and give feedbacks for each other's musical work. Albert (2015) also emphasize the use of social media as an online community of practice, such as Facebook, YouTube, Twitter and blogs. Educators can utilize social media platform to upload students' video or audio file which facilitate the discussion between students, and provide active roles to students so that they can self-regulate their own study.

Online music community also provides the space in which participants can form and sustain their musical identities as a performer, composer or critic, even though their close friends and family members in local life might not consider them as such. Therefore, the online world enables musicians to possess the desirable identity, which they were reluctant to form in real life.

Using online community of practice in school setting can provide the benefits of filling the gap between student's cultural experiences gained from online community and the knowledge they need to attain at school. Partti and Karlsen (2010) emphasize the importance of acknowledging student's musical knowledge and interest attained from the online community. If public music education fails to integrate students' musical skills and experiences outside of school, students will be more likely to regard music class inside of school as meaningless and alien.

2.3 Summary of literature review and the direction of this research

According to literature review, research on music from the perspective of media literacy has focused on promoting students' critical media literacy, so that they can criticize the gender bias, materialism, lookism, and racism. With the help of media education, students can escape from having the distorted gender roles, poor body image and low satisfaction and happiness level caused by consuming hip-hop music videos and music lyrics.

While protectionist approach has been emphasized by media literacy researcher in music field, empowerment approach is rather rare to be followed by media literacy researcher when it comes to

music. However, meaningful music research for media education field has been conducted by music education researchers in three different major themes.

This research focuses on filling the gap within media education research: using media for music performance. Although studies about using media for music knowledge acquisition, music composition and music discussion has been conducted, using media for music performance is rarely explored. Music performance is closely related to musician's motivation, confidence and identity (Challis 2007; Partti & Karlsen, 2010). Musicians can perform the composition they made and upload the file to online community to receive feedback and build their musical identity. Therefore, the discovery of the way to use media in terms of music performance will be highly beneficial for future musicians and students in music class.

3 THEORETICAL FRAMEWORK

3.1 Introduction

In order to check the effectiveness of media use for music performance, firm theoretical background is necessary to guide and evaluate the whole process of the preparation and the real performance. This action research ground its theoretical foundation to two different theories: Flow theory and Music performance anxiety (MPA) theory (Nakamura & Csikszentmihalyi, 2009; Barbeau, 2011). One major reason for the selection of these two theories is that regardless of age, gender, music genre, type of musical instrument and the amount of professional experiences, Flow or MPA can happen for musicians (Spahn, Walther & Nusseck, 2016). Another major reason is that flow experience and music performance anxiety have a significant effect on the quality of music performance (Fullegar, Knight & Sovern, 2013). Therefore, these two theories can be useful to evaluate whether musicians could have the best quality of music performance in various circumstances not limiting to certain factors, such as music genre, musical instruments or the length of career.

3.2 Flow

Flow or flow experience indicates the phenomenon in which individual is fully engaged in the activity and perform the best level of their potential in the given situation. Each field of study names this experience with different terms such as optimum performance or being in the zone. When people are being in the zone, or entering the flow experience, the distortion of time recognition happens. Person who are fully immersed in reading on the subway, for example, realize that they already arrive the destination which takes usually one hour and feel that one hour passed as only fifteen minutes passed. Like reading books, activities that promote the flow state are considered to be “autotelic” and intrinsically motivating (Nakamura & Csikzentmihalyi, 2005, p. 96).

Flow theory was first developed by Csikszentmihalyi in 1988 (Csikszentmihalyi, 1988). He was intrigued by painters' tendency of not eating, drinking or sleeping while they were drawing the paintings (Nakamura & Csikszentmihalyi, 2005). Then, he posed a question of what makes them be fully engaged in their performance and activity. Also, he conducted research about what happens in their minds when artists are fully immersed in their artwork.

Over the past thirty years, research conducted within different domains such as art and science (Csikszentmihalyi, 1996), music (Wrigley & Emmerson, 2011) and sport (Jackson, 1996) has proved that the flow experience can be promoted regardless of age, gender, culture and various type of activities (Csikszentmihalyi, 2002). Wide range of research conducted by Csikszentmihalyi (1990; 1998; 2002) and other researchers (e.g., Boniface, 2000; Ellis, Voelkl, & Morris, 1994; Jackson, 1996; and Jackson & Marsh, 1996) has produced the result of nine clarified dimensions of flow experience:

1. Challenge-skill balance
2. Clear proximal goals
3. Immediate and clarified feedback
4. Action-awareness merging
5. Concentration on the task at hand
6. A sense of control
7. Loss of self-consciousness
8. Transformation of time
9. Autotelic experience

3.2.1 Dimension 1: Challenge-skill balance

Csikszentmihalyi (1996) describes that, "In flow, we feel that our abilities are well matched to the opportunities for action" (p. 111). The balance between challenge of situation and skill of performer is regarded as the most important factor to predict the future flow experience (Csikszentmihalyi M. & Csikszentmihalyi I.S., 1992; Jackson & Eklund, 2002). When researchers

tried to measure the level of flow state quantitatively, this dimension has been the major component of measuring tools, such as questionnaire or survey (Yung, 1997; Jackson & Eklund, 2002).

The dimension of challenge-skill balance facilitated scholars to create flow channel segmentation models explaining all combinations of low/high challenges and skills. Common assumption of all the flow channel segmentation models is that the balance between skill and challenge predicts the flow. Here are two simple models. Figure 1 shows the three channel model which represents flow as both high and low matches between skills and challenges. Low skills and high challenges results in anxiety, and low challenges and high skills causes boredom.

Empirical study conducted by many scholars reformulated three channel model into four channel model (Figure 2). In this model, high skills and high challenges predicts the flow state, whereas low skills and low challenges predicts apathy. This reformulation implies the important characteristic of flow that only high skills and high challenges perceived by performer can induce flow experience.

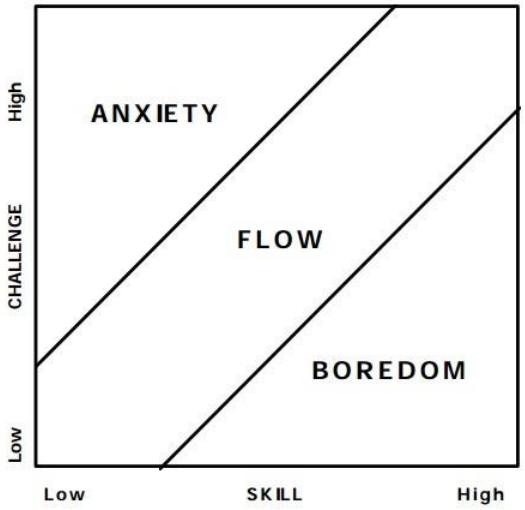

Figure 1 - Three channel flow model (Yung, 1997)

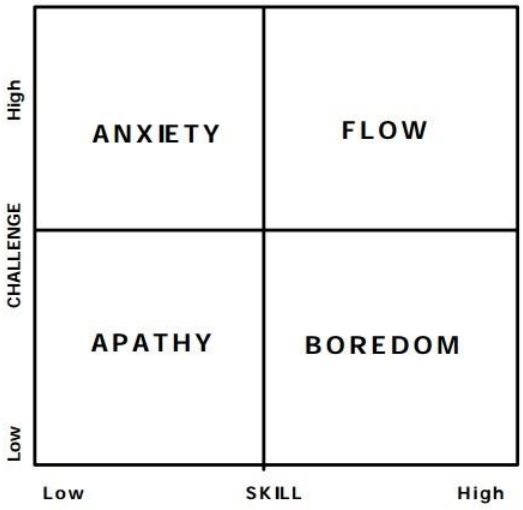

Figure 2 - Four channel flow model (Yung, 1997)

3.2.2 Dimension 2: Clear proximal goals

Csikszentmihalyi (1996) describes that “in flow we always know what needs to be done. The (performing) musician knows what notes to play next” (p. 111). When using media devices and media contents to prepare for the performance, the ultimate object is the completion of a great quality. To accomplish this, a well-defined activity and clear expectations are essential. Goals either determined previously or developed throughout the participations in the tasks should be clearly defined (Hart & Di Blasi, 2013).

3.2.3 Dimension 3: Immediate and clarified feedback

Csikszentmihalyi (1996) argues that in order to have enjoyment and to promote flow experience, immediate feedback toward actions is necessary. Examining how well you are performing is significant to induce flow, because "the musician hears right away whether the note played is the right one" (p.111).

Using recording devices can be useful in terms of providing clear and immediate feedback. Although musicians can hear right away whether they made mistake or not at that moment, sometimes they need to continue playing the music to finish the whole piece. Focusing on finding mistakes while playing can lead to perfectionism, which is one major cognitive symptom for music performance anxiety (Barbeau, 2011). Acquiring immediate feedback from recording file can be helpful for musicians to focus on playing itself and enjoy the music rather than finding mistakes.

3.2.4 Dimension 4: Action-awareness merging

"In flow our concentration is focused on what we do – you're doing it (achieving the goal) without realizing it. (Csikszentmihalyi, 1996, p.112). While musicians are in flow state in their performance, they are not putting an effort to control their action. Without the awareness of performing, they continue playing the music extremely naturally. Musicians entering flow experience feel that music and they become together and the music flows like a river.

3.2.5 Dimension 5: Concentration on the task at hand

Csikszentmihalyi (1996) states that "we are aware only of what is relevant here and now. If (during performance) the musician thinks of his health or tax problems when playing he is likely to hit a wrong note" (p. 112). Performers need to concentrate on the task. It is possible when clear goals has been set and the task at hand is fully understood. According to Hart and Di Blasi, "narrowing of focus and the centring of attention on a limited stimulus field" are needed (Hart & Di Blasi, 2013, p. 2). If the task, for example, is to perform one music at the concert, recording the performance part by part can be helpful to concentrate on a limited stimulus field. Also, concentrating on not the mistakes but creating musical atmosphere while recording can be also helpful.

3.2.6 Dimension 6: A sense of control

Hart and Di Blasi (2013) explain a sense of control as “the sense of exercising control without actually trying to be in control” (p. 2). When musicians are fully absorbed into the performance itself, they are in control of their playing while they don’t recognize it. Riding a bicycle can be one good example of this sense of control. When children learn how to ride a bicycle first, they are trying to control not to fall down and forget about keep pushing the pedal. After several trials, children are getting used to ride a bicycle. Then, they are in control of bicycle not to fall even though they do not pay attention to riding a bicycle.

3.2.7 Dimension 7: Loss of self-consciousness

Csikszentmihalyi (1996) describes that “we are too involved to be concerned with failure … or to care about protecting the ego … The musician feels at one with the harmony of the cosmos…” (p.112). When musicians enters into the flow state, concern for failure vanishes and they become one with the performance (Hart & Di Blasi, 2013). When musicians worry about the result or the evaluation of audience and judges, their concentration level becomes lower. The lowered concentration will lead musicians to commit more mistakes, which can induce the music performance anxiety. Loss of self-consciousness is the important manifestation of flow experience.

3.2.8 Dimension 8: Transformation of time

Csikszentmihalyi (1996) explains that “generally in flow we forget time, and hours may pass by in what seem like few minutes” (p.113). Experience of Croft at the school reveals that sometimes, the task concerning the use of music technology made students be totally absorbed, so that the bell sound indicating to finish the class becomes an interruption to the flow experience (Croft, 2007).

3.2.9 Dimension 9: Autotelic experience

“Autotelic is the term used to describe something that is worth doing for its own sake, for being intrinsically motivating” (Croft, 2007, p. 48). Musicians in flow feel deep sense of enjoyment from intrinsically valuable affair, such as the further developments of their performance quality (Hart & Blasi, 2013). This pleasure felt from deeply inside leads musicians to pursue the better quality of performance more and more, since the good performance quality and entering the flow state are rewarding for them (Nakamura & Csikszentmihalyi, 2005).

According to Nakamura & Csikszentmihalyi (2009) the conditions for reaching the flow state consist of dimention 1, 2, 3 stated above:

- Perceived challenges which do not exceed the existing skills of performers.
- Clear proximal goals
- Immediate feedback about the development

Under these conditions, musicians enter into the flow state which has following characteristics of the flow state consisting of dimension 4-9 described above (Nakamura & Csikszentmihalyi, 2009):

- Intense and focused concentration on the present moment
- Merging of action and awareness
- Loss of self-consciousness
- A sense of control over one's actions
- Distortion of temporal experience (a sense that time passes faster than normal)
- Experience of the activity as intrinsically rewarding

In this action research, the condition for flow experience (Dimension 1-3) will be used to help participants to enter the flow state and the characteristics of flow experience (Dimension 4-9) will be used to figure out and examine whether participants experience the flow state and how strong they experienced.

3.3 Music performance anxiety (MPA)

Music performance anxiety is the mental state in which musicians suffer from physical, emotional, mental and somatic symptoms hindering their performance under the stressful situation. The stressful situation could occur because of lots of audience, judge for competition or media recorder (Papageorgi, Hallam & Welch, 2007; Kenny, 2009). Even experienced musicians suffer from the music performance anxiety such as trembling hands, sweaty palms or lack of concentration. According to Jone's model cited in the research conducted by Weinberg and Gould (2014), music performance anxiety could manifest as facilitative or debilitative one whether musicians feel the

sense of control or not. Facilitative music performance anxiety influence positively on musician's performance and it prepares the musicians to be in the physically, emotionally, and psychologically optimum level for performing. However, debilitative one affects negatively on performers and bothers them, so they feel difficulty in performing in their best state of mind and body. Thus, the quality of music cannot be the best.

3.3.1 Definition

Different scholars define music performance anxiety with different terms such as stress, fear, anxiety, arousal and stage fright. In this research, the three different definitions (stress, arousal, stage fright) will be explained thoroughly to define the music performance anxiety completely.

(1) Stress

Stress is defined as "a threatening of homeostasis to which the organism, in order to survive, responds with a large number of adaptive responses" (Kasper et al, p. 207). In the domain of performance anxiety, the parable of meeting lion is popular to explain the stress response of performers. Imagine that you meet a lion in the jungle. Then, you will think about either confronting the lion or running away from the lion. For musicians, performing in front of lots of audience can create the similar stressful situation. The desire of running away from the stressful situation such as concerts, auditions and recording sessions manifests as a music performance anxiety.

(2) Arousal

Arousal is the psychological and physiological state of being awaken and activated which spans from low level like deep sleep to high level such as excitement (Kenny, 2011; Weinberg & Gould, 2014). Arousal itself is neither positive nor negative, but there is optimum level of arousal for each musician in each according situation (Emmons & Thomas, 2008). However, Kirchner et al reports that there is still a tendency:

> *In general, low arousal during the performance of an activity manifests in boredom and low energy, resulting in a somewhat bland or uninspired performance. Moderate arousal levels produce alertness and relaxed energy, characteristic of an engaging performance, which is possible while in a state of flow. Too much or excessively high arousal can result in anxiety, producing a poor performance. (Kirchner et al, 2008, p. 60)*

In addition, anxiety which reach the highest level in the middle of performance tends to have negative effects, while arousal which peaks right before the performance starts can act as facilitator to fulfill the demands of the specific performance (Wilson, 2002). Therefore, excessively high arousal can be regarded as similar with debilitative music performance anxiety.

(3) Stage fright

Stage fright "appears at the most inopportune and inappropriate times and, in its most severe form, can cripple and end a most talented and promising career [...] Stage fright is the term used when describing anxiety and blocked artistic expression, particularly when it is within the bounds of performing arts" (Rappoport, 1989, p. 1). When stage fright and performance anxiety indicates the unexpected and tremendous dread during the performance, these terms can be interchangeable (Salmon, 1990). The major different aspect between stage fright and performance anxiety is that the latter has both facilitating and debilitating characteristics, whereas the stage fright includes only negative aspect (Barbeau, 2011).

In addition, the use of the term stage fright "has been criticized for ignoring the anticipatory component, which may precede the actual performance by days or even weeks" (Lederman, 1999, p. 117). This criticism shows another major difference between stage fright and music performance anxiety. Stage fright encompass only the anxiety musicians feel at the moment of performance on the stage. However, music performance anxiety includes the pre-performance anxiety, performance anxiety during the actual performance and the aftermath of performance which can demotivate musicians to play again.

3.3.2 Cause of music performance anxiety

Performance anxiety can happen due to various causal factors. Wilson (2002) revised the Yerkes-Dodson Law by examining with a three-dimensional view, and categorized causal factors to three major groups: Trait anxiety, Situational stress and Task mastery. First, trait anxiety includes the personalities or individuals' characteristics being susceptible toward stresses. Second, situational stress incorporates surrounding pressures, for example, competition, audition or public performance. Last, task mastery indicates the range of task difficulty from well-prepared, confident works to those of difficult and under-practiced music. The study conducted by Emmons and Thomas (2008), for example, suggests examples of situational stress factors that might influence musicians: (1) the presence of panel in the audition; (2) another performer playing the same music;

(3) the presence of music teacher during a competition or audition; (4) an accompanist not arriving in time, etc. People on whom the musicians depends, for example, conductor, can belong to situational factors as well.

Papageorgi, Hallam and Welch (2007) in their research classified contributing factors of music performance anxiety into three categories: (i) factors affecting a musician's vulnerability to having performance anxiety; (ii) factors affecting a musician's "task efficacy" (p. 89); and (iii) factors associated to the performance circumstances. These three categories includes the factors described by Wilson, Emmons and Thomas, therefore, I would like to explain in detail about Papageorgi's three categories and summarize.

3.3.2.1 Factors affecting a musician's vulnerability to having performance anxiety

(1) Gender

Female musicians have been reported to be more vulnerable to severe level of performance anxiety (Abrams & Manstead, 1981; Abel & Larkin, 1990) and to be more threatened by the presence of audience (LeBlanc, Jin, Obert, & Siivola, 1997).

(2) Age

Musicians are not equally prone to suffer from performance anxiety across the age spectrum. Adolescents have stronger tendency to be vulnerable to performance anxiety than adults do (Papageorgi, 2007; LeBlanc, 1994, Hallam, 1998).

(3) Individual difference and personality factors

Introverts have more difficulties in coping with high level of arousal, which can lead to increase the level of music performance anxiety (Kemp 1996). The introverted personality is connected to high anxiety levels, as "the requirement for interpersonal, social activity in performing music in the presence of others is contrasted with the often solitary life and practice routine of performers" (Papageorgi, Hallam & Welch, 2007, p. 85).

(4) Perfectionism

The debilitative performance anxiety can be caused easily for musicians who sets excessively high standard of achievement goals and has a perfectionistic trait (Mor, Day, Flett, & Hewitt, 1995).

A perfectionistic trait, a tendency to have unrealistic expectations toward self and to have considerable concern over minor mistakes, can affect negatively to the experience of severe anxiety during the performance (Wilson & Roland, 2002).

(5) Trait anxiety

Several researchers have argued that the level of trait anxiety is significantly related to the level of individual state anxiety. In other words, the individual's overall vulnerability to anxious feeling can predict their anxiety level in a special occasion (Wilson 2002; Reubart, 1985; Kemp, 1996). Some people are more keen than others to fear of failure and comments derived from negative evaluations (Wilson, 2002). Such individuals may consider situations with critics, for example examinations and recitals, as more demanding and frightening. Many researchers have figured out that general trait anxiety is positively correlated to musical performance anxiety (Hamann, 1982; Cox & Kenardy, 1993).

(6) Low self-efficacy

Bandura (1997) describes self-efficacy as "the beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Also, self-efficacy plays a role as an important precursor of anxiety (Schwarzer & Jerusalem, 1992). When it comes to music performance, personal sense of self-efficacy can differ depending on "the difficulty of the piece to be played, perceived musical self-competence in relation to performing that piece and the environmental circumstances (whether an exam, concert or a friendly gathering)" (Papageorgi, Hallam and Welch, 2007, p. 86). Self-efficacy in musical performance can include the belief that one may not only be able to perform the certain music piece, but also to play the specifically difficult part of that music piece (Papageorgi, Hallam and Welch, 2007). Research on self-efficacy in the field of music argues that lower self-efficacy level affects negatively the overall success in matriculated exam1s (McPherson & McCormick, 1999, 2006; McCormick & McPherson 2003).

(7) Sensitivity to evaluation by others

The dread of having a negative evaluation and anticipation of not achieving can induce nervousness (Papageorgi, Hallam & Welch, 2007). Concern about the audience's reactions toward performance has been suggested to have an effect on anxiety increase (Lehrer, Goldman, & Strommen, 1990).

(8) Quality of achievement attributions

Weiner (1985) states that achievement attribution types can affect individuals differently in terms of affection, cognition and motivation. When successful performances are explained in terms of internal, controlled, stable causes (e.g., effort, ability) and failed performances are considered as the consequence of external, uncontrolled and unstable causes (e.g., luck, unexpected issue), individuals have a positive attitude toward the success in future tasks. On the contrary, when failed performances are explained when it comes to internal, controlled and stable causes (e.g. effort) and successful performances are considered as the consequence of external, uncontrolled and unstable causes (e.g., simple task, luck), people have a negative attitude toward the success in future tasks. These different attributions are related to vulnerability to performance anxiety. Music performers vulnerable to debilitative performance anxiety have been discovered to make an attribution to failure internally (e.g., low level of talent or lack of effort) (Papageorgi, 2007).

(9) Lack of performing experience

Salmon and Meyer (1998) argue that musicians perceive differently the feeling of "hyped up" before and during a performance depending on the amount of their experience, and performers with much experience deal with anxiety better. Performers being exposed to performing experiences regularly, may become less afraid of having physiological arousal, because they become used to the arousal as a predestined state of performing. According to the study conducted by Salmon, Schrodt, and Wright (1989), performers with much experience become capable of control their arousal to reach its highest point right before they begin the performance, while performers with little prior experience accumulate the physical arousal before and during the performance, and let the arousal level reach the maximum during the performance. Arousal that goes maximum while performing can cause debilitative performance anxiety, while arousal that reaches its peak right before the performance can help performers to be prepared for accomplishing demanding task (Wilson, 2002)

(10) Previous experiences

A performer who has performed poorly and felt humiliated will be more likely to fear the next performance being afraid of consecutive failures (Harris, 1986). Conversely, precursory successful performances can enable a performer to be more confident (Hanley, 1984).

3.3.2.2 Factors affecting a musician's task efficacy

(1) Inadequate preparation

"Low task mastery in the form of inadequate preparation, lack of confidence for playing from memory and choice of repertoire that exceeds the individual's capability may increase fear of failure and subsequently performance anxiety" (Papageorgi, Hallam & Welch, 2007, p. 89).

(2) Surface approach to learning

Surface learners are motivated mainly by passing the course and getting the good grades because they feel fear of failure. They have strong self-doubts which makes them be vulnerable to music performance anxiety (Papageorgi, Hallam & Welch, 2007).

(3) Motivation for achievement related to fear of failure

Achievement motivation theory suggests that individuals can be motivated to pursue success (desire for accomplishment), and they also tend to escape from failure (dread of failure). The fear of receiving negative comments has also been studied as a cause of debilitative MPA (Lehrer, 1987).
In the music performance setting, individual's type in terms of achievement motivation can affect their susceptibility toward MPA, goal settings, and the amount of effort they invest for the preparation (Papageorgi, Hallam & Welch, 2007). If individuals tend to be motivated to seek success, they are less vulnerable to MPA. In addition, they have positive/challenging/proximal goal settings, and put lots of effort to be fully prepared.

(4) High task difficulty and value

When musicians trust their own capability to perform a difficult music, the performance is regarded to be as a challenge that motivates the musicians. However, if the task is perceived as too difficult for musicians and beyond their capabilities, the performance anxiety is induced (Papageorgi, Hallam & Welch, 2007).

(5) Anxiety coping strategies

Using the proper anxiety coping strategies can have a significant influence on how proficient they are at managing physiological arousal and mitigating the debilitative performance anxiety. The examples of anxiety coping strategies can be adequate preparation, positive attitude toward the performance or enjoyment of the music (Papageorgi, Hallam & Welch, 2007).

3.3.2.3 Factors associated to the performance circumstances

(1) Existence of an audience

Presence and behavior of audience is a meaningful variable which affects performance anxiety in musicians. Empirical research in music have found that the presence of audience induces anxious feeling in musicians (Papageorgi, Hallam & Welch, 2007).

(2) Perception of high self-exposure

The higher level of exposure a musician has, in terms of vulnerability during performance, the more easily they feel anxious (Wilson, 1997). The perception of exposure is connected to factors such as "solo versus group performance, public performance versus solitary practice, evaluative performances (exams, recitals, auditions) as opposed to playing for pleasure in relaxed environments and, finally, playing demanding or inadequately prepared musical works rather than easy or over-learned pieces" (Papageorgi, Hallam & Welch, 2007, p.91).

(3) Unsatisfactory performance conditions

Any condition which may hinder musicians from performing naturally is considered to increase performer's anxiety (Papageorgi, Hallam & Welch, 2007). For example, Parasuraman and Purohit (2000) included conditions such as fresh air, comfortable seats, humidity level and music sheets readability.

Recording with digital media device can increase the perception of high self-exposure, because musicians unconsciously perceive that the recording can be listened by themselves and potential audience. Poor microphone and speaker system can be included in the factor of unsatisfactory performance conditions.

3.3.3 Symptoms of music performance anxiety

Debilitative music performance anxiety hinders musicians from performing the best quality of their music. Pianists, for example, can suffer from sweaty hands and trembling hands causing them to slip from pressing the right keys. Dry mouth and perspiration can bother saxophone player or singers as well. The symptoms of music performance anxiety can manifest into diverse ways:

physiological, mental, somatic and emotional way. The following tables shows the list of symptoms in four different categories

TABLE 1. MPA Symptoms Collected in the Literature and Classified into Four Components (Barbeau, 2011, p. 38)

Somatic	Cognitive	Behavioral	Affective
Headache	Memory slips	Impaired coordination	Feeling of panic
Backache	Inability to focus	Rapid talking	Feeling of overwhelmed
Muscle tension and stiffness	Narrowing of attention	Nail biting	Feeling of confusion
Diarrhea	Decreased concentration	Foot taping	Feeling of insecurity
Constipation	Decreased decision-making	Pacing	Feeling of inadequacy
Nausea/vomiting	Situation-irrelevant thoughts	Fidgeting	Feeling of meaninglessness or hopelessness
Dizziness	Negative thoughts	Increased eye blinking	Nervousness
Chest pain	Perfectionism	Trembling/tremors	Restlessness
Cold hands		Broken voice	Lack of confidence
Shaky hands		Lack of voice control	Worries
Sweaty hands		Nervous tic	Guilt
Racing heart or palpitation		"Freezing"	Shame
Shortness of breath Irregular breath		Making performance errors	Emotional instability
Dry mouth		Make up excuses like poor preparation or not feeling well	Overreaction
Lack of finger control		Interpersonal problems with other musicians (back stage or on stage)	Hypersensitivity
Urge to urinate		Avoidance (avoid difficult passages, avoid performing alone, avoid more stressful performance like audition, etc.)	Irritability
Perspiration		Early leaving the venue	Fright
Hot flashes		Begin late for performance	Fear the worst
Feel apathetic		Showing anger, fear, worry, shame or guilt	Fear of failure
Upset stomach			Fear of judgement and disapproval
Tiredness			
Numbness or tingling			
Feel jittery			

3.3.4 Methods to lower the music performance anxiety

Wolfe(1989) argued that interventions such as relaxation might not be effective, because relaxation concentrates on decreasing arousal level. If the relaxation lowers the arousal level below the moderate level, the quality of performance starts to become worse, since performers having a low level of arousal tend to have boredom. When musicians have high level of arousal, it can induce debilitative performance anxiety. Moderate levels of arousal can be beneficial to performance, since it can induce the facilitative performance anxiety (Lehrer, Goldman, &

Strommen, 1990). According to Hoffman and Hanrahan's research, mental skills to get rid of irrational thoughts are helpful to reduce the performance anxiety and enhance the performance (Hoffman & Hanrahan, 2011).

3.4 The relationship between flow experience and music performance anxiety

The cause of MPA (performance environment & task efficacy) and major dimension of flow state (skill-challenge balance dimension) are closely related to each other. Fullegar, Knight & Sovern (2013) conducted a research to examine the relationship between flow and performance anxiety and made a conclusion that "Flow was more likely to occur for tasks where challenges and skills were balanced, whereas performance anxiety was associated with tasks where the challenge (situational stress) did not match the skills (task mastery) of the performer." (p. 249).

According to Jone's model (Weinberg & Gould, 2014), the sense of control is the key factor determining whether musicians have facilitative or debilitative MPA. When musicians feels in control to play the challenging music, it is more likely that they have the facilitative MPA which affects them to perform the best. The sense of control is also the sixth dimension of flow which describes that when musicians are fully engaged in the performance itself, they are in control of their playing while they don't put an effort to that.

The study conducted by Kirchner et al. (2008) also concludes that there was an inverse relationship between optimal flow and performance anxiety. De Manzano's result is also in accordance with other scholars' opinion about the relationship. Musicians who can enter into high flow state are devoid of performance anxiety and self-destruction (de Manzano et al., 2010).

In conclusion, this relationship between MPA and flow experience proved by several scholars indicates that the well matched balance between challenges and skills facilitates flow experience and reduces MPA level. In this action research, it will be the key to match the balance between challenges and skills by promoting task efficacy and controlling performance environment.

4 METHODOLOGY

In this methodology section, chapter one describes the main research question and subordinate questions. Chapter two justifies the methodological approach by introducing four different research paradigms and two opposite methods. This chapter also justifies that the optimum method for the research question was chosen. Chapter three introduces each participant as co-researcher in my action research and explain their music education history and background. Chapter four provides the information of the action research project to describe the music we played and each participant's role in the performance. Chapter five explains the data collection methods and chapter six states the procedures of action research cycle and data collection. Chapter seven explains the data analysis method used in the research: Framework analysis. Last chapter justifies the rigor and credibility of research findings.

4.1 Research question

The aim of the research is to find the practical way to use digital media in order to promote flow state and reduce the music performance anxiety so that the best quality of music performance can be obtained. Therefore, *the main research question is how to use digital media to promote flow state and reduce debilitative MPA in terms of music performance*. The subordinate research questions are these: 1. How to use digital media device to promote flow experience and reduce debilitative MPA, 2. How to use digital media contents to promote flow experience and reduce debilitative MPA.

Digital media device includes machines or gadgets which allow people to consume and produce digital media contents such as laptop, cellphone, digital recording device etc. Digital media contents include text, audio or video files that are produced in the digital formats.

4.2 Justification of overall methodological approach

In order to solve the research question, I, as a researcher in media education field, chose the pragmatic paradigm and participatory action research methodology. According to Mckenzie and Knipe (2006), there are four major paradigms in research practice- post-positivist, interpretivist, transformative and pragmatic.

In the pragmatic paradigm, researchers argue that

> *knowledge is always gained through action and for action. From this starting point, to question the validity of social knowledge is to question, not how to develop a reflective science about action, but how to develop genuinely well-informed action – how to conduct an action science (Torbert, 1981, p. 145).*

This argumentation justifies conducting my research within the pragmatic paradigm and from the action research approach, because my research aim is to produce practical results (best quality of music performance) by applying related theories (flow and MPA theory) into real life circumstances.

By conducting the action research, meaningful action cycle providing positive experience to musicians can be created. Positive experience can improve the musicians' confidence, and this will bring the power to musicians to change the personal appraisal of successful performance happening in the future (Papageorgi, Hallam & Welch, 2007). Selecting participatory action research (PAR) approach can be justified in relation to music education and media education as well.

1) Musical activity for performing is a continuous cycle (Papageorgi, Hallam & Welch, 2007).

2) The musicians' repertoire keeps changing, so discovering the way to use media regardless of genre or style is essential.

3) Producing practical knowledge is meaningful, because the best quality of music performance requires mastery of skills through practicing.

4) The circumstance formulated in the action research is similar with the one in which educator applies the practical knowledge of research for learners.

5) The researcher and participants participated in the project gains the biggest benefits from the research project. (Cain, 2012)

Next step was to make a decision to use either quantitative or qualitative methods to collect the data, since pragmatic paradigm can adopt both types of methods. Most of the research intended

to explore music performance anxiety and flow state in music was conducted by using quantitative methods.

Relevant studies conducted by adopting quantitative methods mainly focus on validating different scales such as FSS-2 (Flow state scale-2) or MPAI-A (Music performance anxiety inventory for adolescents) (Montanez, 2011; Osborne, Kenny and Holsomback, 2005). Properly validated scale can be useful to examine the level of flow state or music performance anxiety, but the numerical result does not necessarily show how and why the subject experience flow state or suffer from severe music performance anxiety.

Furthermore, there are two more shortcomings of MPA or flow state research conducted by using the quantitative methodology (Bissonnette, Dubé, Provencher & Sala, 2016; Hoffman & Hanrahan, 2011) .

1. Researcher can mostly conduct an experiment or take action by concentrating on one certain dimension such as mental skill or virtual reality exposure training (VRET).

2. It is challenging for researchers to explain the result inconsistent from their expectations.

In the research conducted by Bissonnette et al (2016), for example, virtual reality exposure training was conducted to reduce the level of performance anxiety and improve the quality of the performance. As a result of implementing training sessions, "Significant decreases in anxiety between sessions were observed, but no significant differences between sessions were found for the variables 'concentration' and 'quality of performance'" (Bissonnette et al, 2016; p. 77). The research's aim was to reduce the MPA level and increase the quality of performance, so this research achieved the half of goals. Moreover, with quantitative data, researcher was not able to explain why the quality of performance was not improved while MPA level decreased, but only able to conclude that the relationship between VRET and quality of the performance is not statistically meaningful.

Promoting optimal music performance requires the modulation of several factors influencing the flow experience, thus, understanding the whole picture as much as possible is necessary to discover the right methods. Since individual trait, personality and skill level of each participant is different, it is also impossible to anticipate that the whole process will follow the expected journey.

Therefore, in my research, it is more effective to use qualitative methods such as in-depth interview, observation and research diary in order to invite participants to reflect as co-researchers and adjust the research project's direction based on qualitative data. Qualitative methods also allow researcher to reflect his or her own practice more deeply and thoroughly as well.

Inviting participants as co-researchers is a major method to implement this action research as well. According to Boylorn (2012), participants as co-researchers indicates the method of inviting participants to contribute and investigate the findings of a research project. In this methodological approach, it is valid and valuable that participants become experts through their experiences in the research project, and therefore they collaborate as co-researchers to gather and interpret the data. This method is often utilized in social sciences such as educational studies, social work studies and health studies (Iliev, 2010; Lundy, McEvoy & Byrne, 2011; McLaughlin, 2006; Smith, Monaghan, Broad, 2002; Boylorn, 2012).

According to Boylorn (2012), there are major benefits of inviting participants as co-researchers as follows. Participants can attain the chance to interpret the result of research project, tell their opinion in regards to researcher's decision, therefore influence the group that is being studied. The benefits can be obtained in this action research, when music band members are invited as co-researchers, so that they can interpret the result of their digital media use to improve the quality of performance. In addition, band members as co-researchers suggest new style of music arrangement and new reflections upon themselves to help main researcher to decide better. As a result, co-researchers in this action research influence the music band's decision, the direction of practice sessions, and the result of the final music performance for audience.

Another major benefit of utilizing participants as co-researchers is that participants engage in the whole process of study from the beginning stage (e.g. initial investigating plan) to last stages such as findings and conclusions. The feedback of participants enables the main researcher to reflect the perspective of them. Moreover, participants as co-researchers change their passive role of being observed to the active role of observing. In this action research, band members as co-researchers take the active role of observing and inquiring themselves in terms of digital media use, and provided the feedback to main researcher. Since participants actively explore their digital media use and figure out the new way of using, the main researcher could discover findings with more depth and width.

Pragmatist paradigm, participatory action research and inviting participants as co-researchers are the most appropriate choices for the aim of my thesis. In order to produce practical knowledge and answer the research question of "how", it is best for the main researcher to participate the whole process and gain the practical understandings. Also, participants as co-researchers can contribute to the whole process of action research by voicing out their opinion, providing reflections on their own behavior, and answering the research question together. As a result, the meaningful knowledge and action cycle being worth to be implemented and repeated can be created.

4.3 Participants as co-researchers of the study

As previous part described, this research adopted participatory action research as a methodological approach, and invited participants as co-researchers to gain the according benefits. This part introduces two participants as co-researchers in this action research.

My participants as co-researchers and I belong to one band named "Northern lights" which was organized in 2015. As our first performance, we arranged a concert named "Auroran Loiste – Seeing the aurora" in May 2016, which was held in Juhlasali in the University of Tampere. About one hundred audiences visited to listen to the concert, but the lightings for the place where audience sat were really dark. Therefore, for main vocal, she felt that she is singing almost by alone without audiences (Kübra, p. 5). We played several popular songs around the world along with two other dance performances under the theme of promoting peace around the world. For the first performance, all six members in the band participated to perform, and the performance included in this action research was the second concert we performed as "Northern light".

In the research project, two participants as co-researchers and I as main researcher participated: Kubra as a main singer, Vilhelmiina as a violinist and singer, and Woojung as a pianist and singer. All three of us are amateur musicians playing music as a hobby. Thanks to my co-researchers, investigator triangulation method can be used to validate the data and result scientifically. Participants became aware of flow theory and MPA theory, and tried to find a way to develop their skills and utilize media contents to promote flow experience and reduce MPA. Therefore, participants could implement the research project as co-researchers with me by making the important decisions and investigating our media use together. Moreover, co-researchers and I collaborated to set the direction of our practice, provide feedbacks to each other, and reflect our practices from the perspective of flow and MPA. As a result, I as a primary researcher and investigator could gain both richer experiences and comprehensive understanding of using digital media.

In the following subchapter, I describe each participant's history concerning their music lessons, performance experiences and skills. Kübra and Vilhelmiina agreed that their real name and identity can be referred in this research.

4.3.1 Kübra (Main singer)

In Kübra's case, she did not receive any personal singing lesson before. She started singing as her hobby from the age of eleven. Her family and friends found her gifted at singing from the early age, and she made music from the inspiration of flower in the shape of trumpet by using her lips when she was young. She often sung for her family members in family occasions. At that time, she had practiced by listening carefully and mimicking.

For the first concert of "Northern light", Kübra as a main singer sang traditional English ballad song "Scarborough fair", Turkish folk song "Caddelerde Rüzgar" and Finnish pop song "Sun särkyä anna mä en". This concert was her first official one where she sang in front of more than 100 audiences.

As Kübra mentioned in the personal in-depth interview, her general trait anxiety level is high and she perceives herself as a musician who is vulnerable to music performance anxiety. She mentioned in the interview that "you or Vilhelmiina told me Adele was also like that, even though she doesn't show it. I'm like Adele. I don't show it much, but in my inner side, there are turmoils (Kübra, p. 6)".

4.3.2 Vilhelmiina (Violinist and singer)

First, I describe Vilhelmiina's musical history as an amateur violinist briefly. Vilhelmiina started learning how to play violin from the age of six. She took violin lessons from her preschool teacher who played the violin. Then, at the age of seven, she entered the music school (Pielisen-Karjalan musiikkiopisto in Finnish) in ilomantsi. As an amateur performer, she has had many casual performances for her relatives and family members. Recently, she also had several performances with other musicians for earning some money. Vilhelmiina has been playing the violin for mostly classical music, so it was easy for her to read notes from the music sheets. However, she has nice sense of harmony and good improvisational skills which is necessary and useful for accompanying. Concerning singing experiences, Vilhelmiina had been the member of choir from the age of seven to twelve. After that, she did not have singing lessons. Recently, she joined the church choir and sing as an alto singer.

In the first concert “Auroran Loiste- Seeing the aurora”, Vilhelmiina played violin to accompany the English ballad song “Scarborough fair” and the Turkish song “Caddelerde Rüzgar”. Her improvisation and accompanying skills were already good for performing the first concert.

4.3.3. Woojung (Pianist and singer)

I describe my history as an amateur pianist first. I started learning how to play the piano from the age of five. I took piano lessons from preschool teacher who could play the piano. Then, from the age of seven to twelve, I started receiving piano lessons from the private piano institution. At the age of twelve, I met my private piano teacher and I have received piano lessons for classical piano music from him until the summer of 2015. I performed the classical music four times at the concert where my private teacher’s students performed. From 2012 to 2015, I had played the piano at church for the church quire and church services. These experiences as a church pianist enabled me to develop the sense of accompanying other musicians and singers.

Regarding singing experiences, I joined the high-school choir from 2006 to 2008. In 2006, other students and I whom the conductor selected had the opportunity to visit and perform at Korean churches in US. From 2009 to 2015, I had been the member of quartet in the church and we performed at least two times per month before the sermon started. These experiences as a singer developed my vocal skills and accompanying skills as a chorus singer as well.

4.4 Action research project (Band performance)

As a band “Northern light”, we were invited to perform for the 50th anniversary event held by the translation department of the University of Tampere. The event was held in the Laterna restaurant in Tampere city center in October 13, 2016. Our band “Northern light” performed four different songs in total. We played two songs before the event starts, and the rest two songs were played after having the dinner. The four songs were performed in the following sequence: Swan, Hero, Words and You’ve got a friend.

This time, Kübra, Vilhelmiina and I participated to the performance. Kübra is the main singer of our group, Vilhelmiina sings and mainly plays the violin and I sing and play the piano primarily. Here is the table to show what each person performed for given music.

TABLE 2. Each band member's role in selected music for the performance

Song / Person	*Kübra*	*Vilhelmiina*	*Woojung*
Swan	X	Violin	Piano
Hero	Sing	Violin	Piano
Words	Sing (Soprano)	Sing (Alto)	Sing (Tenor)
You've got a friend	Sing	Sing (Chorus)	Piano & Sing (Chorus)

Our band had 12 practice sessions from September 8 to October 12 except personal practice time of each member. Most of practice session happened in Main building D 13 lecture room or Pinni B chapel in the University of Tampere. After we selected the music we want to play in the event when we had the first meeting, I told my band members that I will integrate this performance as my project study and my action research data. Then, I briefly explained about my research topic and told them that thesis related theory and knowledge I gained will be helpful for us to achieve the best quality of music and enjoy the process itself.

Throughout the whole practice session, we used several digital media devices such as laptop, I-phone 5, professional-level recording device H2, microphones, mixing board and speaker system. We also used digital media contents such as YouTube videos, MP3 files to warm up and share our ideas to develop our music better.

Before I explain about four songs we chose, I need to describe our band's strength and limitations we considered, when we were choosing the repertoire for the performance. For this project, we had only three band members and the instruments we could use were limited to piano and violin. However, we wanted to prepare various types of music as much as we can. Therefore, we came up with solo songs, acapella song and instrumental music, which we can handle.

Swan- This music is classical music composed by Saint-Saens. It is 13th movement of the carnival of the animals, and it has been arranged for many instruments, but most famous version is cello solo. We chose to play this song, because we could play this music with only piano and violin, and this music creates the calm and peaceful atmosphere which can allow audience to slowly be engaged in music performance.

Hero- This music is the American popular song, which was sung by American singer Mariah Carey. Our main singer Kübra suggested this song, and she wanted to sing this song more emotionally than the original powerful version of Mariah Carey. Several music instruments such as keyboard, violin, cello, drum, bass were necessary to accompany this music in the original version, but we arranged the music to play with piano and violin.

Words- This music is an acapella song. We wanted to perform music from various genre, and we chose this song. Even though I knew this music would be challenging for us, because it was first time to sing an Acapella song for Kübra and Vilhelmiina, we wanted to give it a try. Vilhelmiina and Kübra like the atmosphere and especially lyric of the music, which is a bit related to translation department.

You've got a friend- This music is the American pop song as well, which was sung by Carol King. Kübra suggested this song, because she liked the melody and lyrics and thought that it would be suit with the celebration party.

The fact that only three participants joined in the action research is a certain limitation. However, co-researchers playing with different musical instruments for different genre of music helped to gain meaningful data from various perspectives and to overcome this research's limitation considerably. First music "Swan" allowed us to gain qualitative data concerning classical instrumental music. "Hero" and "You've got a friend" allowed us to analyze the media use from the perspective of popular music performance. Singing "Words" provided the insights for the use of media in terms of unique genre acapella which consists of only voices, not any musical instrument.

Each co-researcher contributed to the data collection from different perspectives: vocal, violin, and piano. Kübra and Vilhelmiina provided the unique feedback and data about the use of media by telling their own personal digital media use, which is impossible for me to gain as a pianist. The analysis part in result section will describe this contribution further.

4.5 Methods of data collection

After each practice session, I wrote the research diary to keep the record of my implementation as a motivator and educator to promote the best quality of music and promote the best practice quality. I added my reflection toward each member's behaviors and tried to explain the

reason by reflecting based on the theoretical knowledge concerning music performance anxiety and flow theory.

During the practice session, participants and I used digital sound recording devices such as iphone 5 and H2 professional recording device to keep the record of our music and progression. In the actual performance, we used both sound recorder and video recorder to record the performance comprehensively.

One day after the actual performance in the event, I conducted the in-depth personal interview with Vilhelmiina (violin, vocal) to ask about her experiences and opinions about using media throughout the practice sessions and performance. Then, after one week, I conducted the same type of interview with Kübra (main vocal). I conducted a structured interview in an informal way by having a conversation together and sharing our opinions and feelings about digital media use throughout the project.

In order to evaluate the flow level and MPA level of participants, I could use Flow state scale-2 (FSS-2) and Performance anxiety inventory for musicians (PerfAIM) to gain the quantitative data. However, the numeric result from the use of the flow and MPA scale cannot depict the whole experience and emotions of each participant. When it comes to analyzing the relationship between media use and flow experiences, numeric result does not provide enough detailed information. Therefore, I selected to gather data by writing a research diary, recording the practice session and the real performance, and conducting personal interviews with participants, because qualitative data can lead researcher to examine the result and discover the cause behind it.

Three different data source explained above also enabled me to use data source triangulation to produce more academic and scientific results. Examining the result and phenomenon from different perspective of each data set is helpful to understand the whole picture more scientifically (Flick, 2004).

4.6 Procedures of action research cycle and data collection

Action research cycle consists of four phases; Plan, Act, Evaluate, Reflect. According to Cain (2012), when researcher formulates the research cycle, the theory selected by researcher influences the whole research cycle. In the following subchapters, I describe the action research cycle modulated to my research aim by reflecting flow theory and MPA theory. Researcher planned this

action research cycle before conducting the real action research. Therefore, there was more or less altered execution and unexpected results at the end of action research.

1) Plan phase

a) Invite participants into the research

- Researcher needs to introduce to the participants about the aim, theoretical framework and basic knowledge about the relationship between the flow experience and the music performance anxiety. After participants are informed, they will be more willing to cooperate with researchers' action. Also, participants will be able to critically reflect their behavior based on the newly attained knowledge and contribute to the research project as co-researchers.

b) Plan the way to balance between skill level and task difficulty

- Using media contents such as YouTube video to maintain and improve required skills necessary to play certain music. YouTube videos of other artists' performance can provide correct examples of musical components, such as rhythm. Therefore, band members can improve their skill sets by following those examples and balance their skills to the challenge. As a result, YouTube videos will play the role as a motivator to improve the skills.

- After the skill sets improve to certain level, musicians will start to feel bored because the level of task difficulty becomes lower in response to skill level improvement. Then, the recording device can be used to increase the task difficulty, so that the chance of flow experience would become higher. Since using the digital recording device place musicians into the evaluative context rather than playing for enjoyment, musicians feel increased level of self- exposure (Papageorgi, Hallam & Welch, 2007). Increased self-exposure indicates that situational stress of musicians also becomes stronger, which leads to increase the task difficulty level and make the task more challengeable. As stated in the part describing the relationship between flow and MPA, balancing situational stress (challenge) and task mastery (skill) is closely related to achieve flow state (Fullegar, Knight & Sovern, 2013). Therefore, using the digital recording device to increase the situational stress and make the task more challenging is effective to balance the improved skills of musicians for flow state achievement.

c) Plan the way to eliminate the anxiety caused by using digital recording devices

- In case the participants feel nervous or overwhelmed by using recording device, which can induce the performance anxiety potentially, researcher can use the way to reduce the task difficulty such as recording not the whole music but the certain part which participants are most confident for.

d) Plan the way to promote the sense of control

- Researcher needs to focus on pointing out the positive development achieved through each practice session.
- Finding out and improving the weak part can promote more sense of control.

2) Action phase

a) Researcher needs to be keen on participants' subtly changing state on each practice session.

b) To promote the confidence of players that they can control the situation, researcher needs to focus on providing concrete and positive feedback to participants.

3) Evaluation phase

a) After each practice session, listen to participants' (co-researcher) feeling and opinions.

b) Researcher needs to write a research diary to summarize the activities in each practice and evaluate the decision made to promote flow experiences. Also, in the research diary, it is necessary to connect the discovery with theoretical framework.

4) Reflection phase

a) Conduct an interview with participants (co-researchers) to reflect together. Since, each band member plays different instrument (in this case, piano; violin; vocal), each member can provide different reflections and knowledge concerning the research question.

b) By gathering the reflections, triangulation method can be used to verify the knowledge each member attained through the action research. If all three members attain the practical knowledge in common, researcher can prove the knowledge to be more academic knowledge.

c) After listening to participants' (co-researchers) reflections, primary researcher can confirm whether participants experienced any positive change in terms of reducing MPA and promoting flow state.

By, conducting this action cycle, following results were expected to occur.

1) Find and internalize the proper digital media use to promote the best performance
2) Understand and improve the researcher's practice as a media educator
3) Facilitate the change in co-researchers' perception toward digital media use
4) Play the best quality of music in the real performance
5) Elaborate the action cycle and share it with other researchers
6) Contribution to elaborate the MPA and flow theory

4.7 Data analysis method (Framework analysis)

Framework analysis method was developed by Jane Richie and Liz Spencer (2002) from the NetCen, an applied research agency in the 1990's "in the context of conducting applied qualitative research" (p. 305). Frame analysis method is one form of content analysis methodology, and researchers do not use conventional codes or fragments in this analysis, compared to directed content analysis (Moerman, 2017). Researchers use summaries and synthesize the data while analyzing with the framework, which is rather deductive process than inductive process which is generally used for the most of content analysis methods (Moerman, 2017). If you are approaching your data following the deductive framework approach, your coding will be guided by a fixed framework, and you index your material according to these pre-defined codes.

Originally, the framework analysis method was developed for the use in the field of political science to fulfill the purpose of solving practical issues (Richie & Spencer, 2012). Due to the difference of the context of this action research, the framework analysis method should be modified according to characteristics of this research. The aim of this action research is to discover the way of using digital media to promote flow state and reduce debilitative MPA level, so that the best quality of music performance can be obtained. Therefore, when researcher follows deductive process to analyze the data and synthesize the knowledge, it is essential to apply flow dimensions

(flow inducing factors/flow manifestations) and causal factors of MPA to the data. General knowledge already confirmed by scholars is applied as a framework to prove practical ways of using digital media. Thus, the use of digital media can be validated to be effective to promote flow state and reduce the debilitative MPA level.

4.7.1 Key characteristics of Framework analysis

Framework analysis contains four key characteristics: Case and theme based approach, Hierarchy of themes and sub-themes, Data reduction through summarization and synthesis, Retained links to original data (NetCen learning, 2012; Moerman, 2017). Here, I explain how proper it is to use framework analysis for this action research.

1) Case and theme based approach

In this research, band performance project is the main case to be analyzed. Inside of the project, each musician and each music we performed are also cases which help to narrow down the scope to one specified area. The process of familiarization to in-depth interview and research diary helped to emerge themes which provide the analytic indexes to classify the data, such as the use of digital recording device and the use of digital media contents.

2) Hierarchy of themes and sub-themes

One main emerging theme out of analysis process was the use of digital recording device, which turns out to have four different sub-themes: Receiving effective feedbacks, Placing into the audience's perspective, Perfectionism & concentration and Motivation. Other main theme was the use of digital media contents, which has two different sub-themes: Checking the right rhythm, melody and accompanying style and Gaining the ideas of arrangement and creating own style. The third main theme was MPA caused by using digital recording device in the beginning phase. The last main emerging theme was the description of each musician's MPA and flow experience right before and during the real performance.

3) Data reduction through summarization and synthesis

In this research, three co-researchers produced the data by discussing in the interview, recording the practice and the real performance with audio recording device and video recording device. Primary researcher produced data by writing the research diary. Through summarization process, data triangulation method can be adopted effectively, since it is easy to find the common

aspects and characteristics which all three co-researchers found out during the action research project.

4) Retained links to original data

Among the whole sets of data, the textual data of this action research are the transcripts of in-depth interview with co-researchers and research diary. In the interview transcripts and research diary, co-researchers and I explained how each individual used media devices and media contents, and there were common ideas all three of us mentioned and unique ideas each one of us mentioned.

In the context of presenting common ideas, retained links to original data are essential to validate the result as scientific one, since investigator triangulation method was used by including individuals' opinion which turned out to be identical concerning the same theme. Therefore, the investigator triangulation can be authentic and meaningful when the source of original data is retained to show the speaker.

In terms of describing unique ideas of each participant, retained links to original data is also significant to show the context in which the idea is validate. In this action research, each researcher played different musical instruments (violin, piano, vocal), and had different personality traits and different amount of previous performance experiences. Therefore, in order to contextualize the unique idea more effectively corresponding to each participant, it is effective to retain links to original data.

4.7.2 Five key stages in Framework analysis

Framework analysis has five key stages to follow the process of analyzing the data (Moerman, 2017).

1) Familiarization
2) Identifying thematic framework
3) Indexing
4) Charting
5) Mapping and Interpretation
    a. Description
    b. Create typologies(case based)
    c. Create categories(theme based)
    d. Mapping linkages
    e. Develop explanations

4.7.2.1 Familiarization

According to Ritchie and Spencer (2002), “before beginning the process of sifting and sorting data, the researcher must become familiar with their range and diversity, must gain an overview of the body of material gathered” (p. 312). Therefore, inevitably, familiarization includes the immersion into the data (such as reading transcripts, studying research diary). In this action research, the analyst thoroughly examined in-depth interview transcripts, research diary and audio/video recording files. Since there were two interviews and recording files of four music to be analyzed, it was possible to review all the materials without selecting certain parts intentionally. During this stage, key ideas and recurrent themes emerged.

4.7.2.2 Identifying thematic framework

Once the body of material has been thoroughly reviewed, the analyst already have the notes identifying the “recurrent themes” which appear as important to subjects(participants in this research) themselves. Then, the analyst comes back to the notes and find out the “key issues, concepts and themes according to which the data can be examined and referenced” (Ritchie & Spencer, 2002, p. 313). As a result, the analyst forms the thematic framework within which the research data can be filtered and categorized. In this action research, main researcher identified four key recurrent themes: MPA caused by using digital recording device at first, The use of digital recording device, The use of digital media contents and Description of each musician’s MPA and flow experience right before and during the real performance. It was rather evident to have these themes, since researcher conducted a structured interview to gain the data concerning the use of digital media to promote flow state and reduce the debilitative MPA level.

After discovering four main emerging themes, it was necessary to find sub-themes to make the indexing process more effective to filter and classify collected data. Especially, the main themes “the use of digital recording device” and “the use of digital media contents” required sub-themes to filter more effectively, because the data concerning these two main themes included a big amount of textual data. Therefore, the texts of in-depth interview transcripts and research diary has been sorted and distributed into four different main themes. Then, main researcher tried to discover three participants’ common use of digital recording device and digital media contents, since the common way of two or three participants to use digital media can validate the findings as more scientific ones. Also, in this process of discovering sub-themes, flow and MPA theory were considered to

As a result, sub-themes for the main theme “the use of digital recording device” emerged: Receiving effective feedbacks, Placing into the audience’s perspective, Perfectionism & concentration and Motivation. Sub-themes for another main theme “the use of digital media contents” emerged as well: Checking the right rhythm, melody and accompanying style, and Gaining the ideas of arrangement and creating our own style.

For the main theme “description of each musician’s MPA and flow experience right before and during the real performance, main researcher intentionally made two sub-themes, such as Before the real performance and During the real performance, so that the data can be sorted out and the findings can be described in the organized and chronological way. In addition, since the sub-theme “During the real performance” included participants’ experiences for four different music, it made sense to sort the data out according to each music: Swan, Hero, Words and You’ve got a friend. Following table is the thematic framework identified for indexing process in this action research.

TABLE 3. Thematic framework for indexing process

Main themes	**Sub-themes**
1. MPA caused by using digital recording device at first	
2. The use of digital recording device	2.1 Receiving effective feedbacks 2.2 Placing into the audience’s perspective 2.3 Perfectionism & concentration 2.4 Motivation
3. The use of digital media contents	3.1 Checking the right rhythm, melody and accompanying style 3.2 Gaining the ideas of arrangement and creating our own style.
4. Description of each musician’s MPA and flow experience right before and during the real performance	4.1 Before the real performance 4.2 During the real performance 4.2.1 Swan 4.2.2 Hero 4.2.3 Words 4.2.4 You’ve got a friend

4.7.2.3 Indexing

According to Ritchie and Spencer (2002), "Indexing refers to the process whereby the thematic framework or index is systematically applied to the data in their textual form" (p. 316). As stated in the thematic framework section, main themes and sub-themes were discovered by familiarizing to the in-depth interviews and research diary. Then, the thematic framework was applied to the interview transcription and research diary in order to facilitate the charting process and derive the findings.

Throughout the indexing process, one passage sometimes included different themes which need to be addressed. Multiple indexing of the same paragraph allowed the researcher to discover the patterns of association within the body of data. Here is the illustrative example of the indexing process.

Vilhelmiina

V: And also, like I said, I kind of cheer violin when I played it as the others hear it. I heard it like from the audience (perspective). And okay, then I know the different things to correct than when I play myself. And I think that was the great improvement also. I know this okay, this I thought it sounds okay, (but) it doesn't sound when I heard it here so.

2.2 Placing into the audience's perspective

J: Yeah, as you mentioned, the characteristic of violin. I think it can apply for violin, flute and trumpet or saxophone as well. Yeah the sound is quite different (between) what musicians hear and what audience listened to.

V: and I think when you get more professional, you start to think what the audience hear, and then it's nice to have like this kind of help.

J: Did you feel that when you… so in the process of finding the errors, and then correct it and concentrate on it more. And then, after that, you think that you feel less anxiety?

V: When I was going to concert, my friends asked me if I'm feeling nervous or anything. I didn't feel like at all this kind of anxiety I used to (have). I just know when I'm on the stage, I can concentrate. And when I was there, I think it was like perfect flow even though maybe there were some little mistakes. But, I still thought when I was in the performing, (that) it is more important for audience to have like this experience of flow also than to like. They don't give so much thoughts to one mistake or something. I think also this band project helped me to see it this kind of point of view.

4.1 Before the real performance

4.2 During the real performance

2.3 Perfectionism & concentration.

Video recording files of actual performance belonged to the index "4.2 During the real performance", so that it can be associated with the according textual data.

4.7.2.4 Charting

Charting is the process of arranging the picture of the data as a whole by applying the thematic framework to each transcript. While the analyst does charting, "data are lifted from their original context and rearranged according to the appropriate thematic reference" (Ritchie & Spencer, 2002, p. 318). There are two different layout for charting: Theme based (for individual theme across all participants) and Case based (for individual participant across all themes). In this research, theme based layout for charting was used for the purpose of describing the findings part in an orderly way. Therefore, for each sub-theme, one chart was formed to include all three participants' data which is associated with that sub-theme.

The following table is the illustrative example of charting for this action research. In the example, charting process was conducted for the sub-theme "2.1 Receiving effective feedbacks".

TABLE 4. Illustrative example of charting for this action research

	2.1 Receiving effective feedbacks
Vilhelmiina	When I heard the recorded things, I noticed that okay, this is the thing I have to correct, and I knew what to concentrate on more. It was clearer than to me what to correct, and I hadn't anxiety what should I do to get it this better. And in the performance, I know what I should do and when I could just concentrate on the performance, and that was the nice part (Vilhelmiina, p. 3). Yeah, actually, yes, I think so. It help a lot I think. Yeah, how to correct myself and not concentrate on the mistakes (Vilhelmiina, p. 7). Because I even heard when I'm doing the vibration, in there, I hear it is too like, it sounded like nervous. So, I was like "okay I don't want this feeling." And then I started to be like "Okay, I'll try to be like more relaxed." and I think it succeeded pretty well in the end (Vilhelmiina, p. 8). Because my teachers have told me to alter this time, and not doing it like a mechanical thing. But, I couldn't hear myself so well, what is good and what is not good. Now that I heard it, and now somehow I learned it, what they said for me (Vilhelmiina, p. 8). Yeah, when you play, it goes over and you don't remember what was good and what was bad. You can't check there (Vilhelmiina, p. 9).
Kübra	Well, clearly, you saw the.. and you heard the music, I mean all those instruments that you were playing, and also the singing very well in detail. Every flow, every rhythm, and your weak points, at the points that we need to improve (Kübra, p. 1) I mean, from my perspective, it(recording) was more helpful to improve what we have done, because you follow up the procedure, you follow your progress. And then on the way, if you see any kind of mistake, any weaknesses, then you are working on eliminating all these mistakes and improving the weaknesses. (Kübra, p. 2)
Woojung	Personally, I can check my piano playing and it is good to keep listening the recordings, because I improvise to accompany the singer. I can repeat what I played for singers and make the good improvisation remain. (Research diary, 2016. 09. 09) Thanks to the quality of recording (H2next Zoom-professional recording device), we could figure out that Vilhelmiina and I breathed in at different point. Since we are singing acapella song and there is no accompanying musical instrument, breathing in at the same moment while singing is really important. Good media device enabled us to receive important feedback to increase our skill which is necessary for singing better. (Research diary, 2016. 09. 28)

Another illustrative example of charting for the sub theme "4.2.2 Hero" is presented here.

TABLE 5. Another illustrative example of charting for this action research

	4.2.2 Hero
Vilhelmiina	Actually, I was thinking when I heard I didn't hear her(Kübra) well, I was thinking "Is she nervous?" or something. Then, I was beginning to think "okay, when someone is nervous, is it helping when someone is like encouraging? Or should I like play more loud? But, I cannot, because if I'm playing more loud, then audience will not hear Kubra, so it was like that you couldn't concentrate (Vilhelmiina, p. 5).
Kübra	You told me that you read articles about it, and those articles, it was writing like in the real performance time, usually people feel nervous, and you have a tendency to play and sing faster. I felt that nervous feeling. And I wasn't relaxed as much as I was in the rehearsal. So, I think and my anxiety description would be like your whole body, this is what I feel. Your whole body feels like frozen. Only you, you vibrate your voice. So, there is like a pressure. Something is pressing you like this. And then, of course, it wasn't… the feeling that I had wasn't the same, I mean in the rehearsals and the real performance (Kübra, p. 3). Yes, yes. So it was just echoing in my mind, when I started the hero: "It's not going to be the best, it's not going to be the best." Well, microphone doesn't sound nice as we wished. We couldn't manage to arrange the one, I mean, that mixing board that has the echo effect. So, I was kind of disappointed, demotivated, and I was also a bit having some nervous feelings because of this, and also the audience, everything mixed up. Yeah… (Kübra, p. 7).
Woojung	So, you couldn't concentrate. I couldn't concentrate either. The moment she started singing, I noticed "Ah, the mic sound, the volume is not enough." So, actually, I wanted to stop at that moment, and then start once again, but I couldn't. It could be better decision to stop there. (Vilhelmiina, p. 5) When Kübra started singing, I noticed that the volume of her voice is not big enough.... Since I was thinking about what I should do with the smaller volume, I became distracted and passive to improvise. Therefore, I improvised the piano accompaniment more safely, and the quality of piano accompaniment became little bit worse (Research diary, 2016. 10. 13).

As depicted in the examples, all three co-researchers' original data has been charted according to the thematic framework. By doing this, collected data were rearranged in an organized way for main researcher to interpret and describe in the findings part.

4.7.2.5 Mapping and Interpretation

As all the data sets have been categorized and charted according to main themes and sub-themes, the analyst starts to construct "key characteristics of the data, and to map and interpret the data set as a whole" (Ritchie & Spencer, 2002; p. 320). Here, the profound and systematic procedure of detection is proceeded. According to Ritchie and Spencer (2002), qualitative analysis pursues several key objectives and features, namely:

"defining concepts

mapping range and nature of phenomena

creating typologies

finding associations

providing explanations

developing strategies, etc" (p. 321)

In mapping and interpretation stage, the analyst selects a few key objectives to attempt with the guidance of the original research questions, the themes, and relations which have come up to the surface from the data while charting (Ritchie & Spencer, 2002).

After reflecting based on the research question and themes of this research, finding associations, providing explanations and developing strategies (revising strategies in this research) were decided to be the main focus of interpretation.

First, finding associations between the rearranged data and theoretical framework was the key objective. Since the action research aims to discover the use of digital media to promote flow state and reduce the debilitative MPA level, it is essential to verify with the theoretical framework whether the participants' actual use of digital media actually affects as expected. For instance, the illustrative example chart for "2.1 Receiving effective feedbacks" presented in charting section was associated to the third flow dimension "Immediate and clarified feedback". Similarly, the illustrative example chart for "4.2.2 Hero" depicted in charting section was related to the MPA causal factor "3.3.2.3-(3) Unsatisfactory performance conditions".

Then, researcher proceeded to provide explanations based on the association discovered in the previous mapping and interpretation process. In this process, researcher revealed the linkage between the use of participants in the actual environment and theoretical knowledge, so that the actual use can be proven and supported by theories. For example, "2.1 Receiving effective feedbacks" part describes all participants' common use of digital recording device. Then one of the major conditions for reaching the flow state "Immediate and clarified feedback" supported the positive influence of the common use.

Last, revising strategies in action cycle was the main objective. After conducting action cycle and performing, several aspects to improve emerged to be reflected. After analyzing the interview transcripts and video recording file, it became clearer to suggest what to improve. For example, as we can see in the chart for "4.2.2 Hero", the quality of microphone system and the lower volume of microphone affected the quality of music performance negatively by inducing the debilitative MPA. Therefore, the planning phase of action cycle should include the preparation of microphone system in advance.

4.8 Rigor and credibility of the research

This chapter explains the ways to achieve rigor and credibility of this action research. The aim of this research is to produce practical knowledge to promote flow state and the best quality of performance. Therefore, researcher adopted pragmatic paradigm and participatory action research (PAR) methodology in order to achieve the practical goals. Even though this research is based on pragmatic paradigm, main researcher gathered data by qualitative methods such as in-depth interview, research diary, audio records and video records. Therefore, the process of data collection, data analysis and research findings should be evaluated by the criteria established for the qualitative methodology.

Scholars commonly criticize the research which collected qualitative data "for lacking scientific rigour with poor justification of the methods adopted, lack of transparency in the analytical procedures and the findings being merely a collection of personal opinions subject to researcher bias" (Noble & Smith, 2015; p. 34). Unlike the quantitative research enhancing its rigor and credibility by establishing measurement criteria such as validity, reliability and generalization, qualitative research cannot approach in the same way, because of its different philosophical positions from quantitative research (Rolfe, 2006). While quantitative researchers have the goals to measure and directly perceive the world, qualitative researchers aims to provide a "subjective interpretation" of the world (Rolfe, 2006; p. 306).

After constant debates have been present for more than thirty years about the best criteria for evaluating the quality of qualitative research, scholars have not yet reached any consensus (Rolfe, 2006). One main position appearing in the literature on this matter is to evaluate the qualitative research based on the same criteria for quantitative research. Another main position is to create the different set of criteria, and the last main position is that it is meaningless to set up "any predetermined criteria for judging qualitative research" (Rolfe, 2006; p. 304).

In order to ensure the rigor and credibility of research procedure and research findings, this action research follows the second position using different set of criteria for qualitative research. Several scholars have defined the alternative terminologies roughly corresponding to validity, reliability and generalizability, and following table introduces and explains alternative terminologies: Truth value, Consistency, Neutrality and Applicability.

TABLE 6. Terminology and criteria used to evaluate the credibility of research findings (Noble & Smith, 2015; p. 34)

Quantitative research terminology and application to qualitative research	**Alternative terminology associated with credibility of qualitative research**
Validity The precision in which the findings accurately reflect the data	*Truth value* Recognises that multiple realities exist; the researchers' outline personal experiences and viewpoints that may have resulted in methodological bias; clearly and accurately presents participants' perspectives
Reliability The consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings	*Consistency* Relates to the 'trustworthiness' by which the methods have been undertaken and is dependent on the researcher maintaining a 'decision-trail'; that is, the researcher's decisions are clear and transparent. Ultimately, an independent researcher should be able to arrive at similar or comparable findings. *Neutrality (or confirmability)* Achieved when truth value, consistency and applicability have been addressed. Centers on acknowledging the complexity of prolonged engagement with participants and that the methods undertaken and findings are intrinsically linked to the researchers' philosophical position, experiences and perspectives. These should be accounted for and differentiated from participants' accounts
Generalisability The transferability of the findings to other settings and applicability in other contexts	*Applicability* Consideration is given to whether findings can be applied to other contexts, settings or groups

As the table depicts, researcher evaluated the research methodology and findings with the criteria established with truth value, consistency and applicability. Neutrality can be achieved when researcher address all three criteria (Noble & Smith, 2015; p.34).

4.8.1 Truth value

In order to promote truth value to the qualitative data collection, analysis and results, it is essential to illustrate participants' perspectives correctly and precisely. Typically, in order to ensure the truth value, qualitative research adopts the way "to invite participants to comment on the interview transcript and whether the final themes and concepts created adequately reflect the phenomena being investigated" (Noble & Smith, 2015; p. 35). In this research, inviting participants to the research as a co-researcher ensured to attain the truth value. Participants as a co-researcher had the opportunity to become familiar with the key themes (digital media contents and device) and concepts (flow and MPA theory) before we conducted the action research. Therefore, they had constantly reflected their own practice and development concerning the key themes and concepts during the whole project, and then they explained and described their reflection of experiences in the in-depth interview. Therefore, the in-depth interview transcripts in this action research already contains the participants' perspectives clearly.

Qualitative research frequently includes "rich and thick verbatim descriptions of participants' accounts to support findings" (Noble & Smith, 2015; p. 35). Rich and thick verbatim allows researcher to present participants' perspective accurately (Noble & Smith, 2015). In this research, one characteristic of framework analysis "retained links to original data" enabled the researcher to incorporate authentic and abundant verbatim of participants' explanations. After the process of sorting and rearranging the data, the original data remained as the table four and five illustrates. In the findings chapter, the original data of in-depth interview transcripts remain and narrate participants' perspective authentically.

Another way to ensure truth value in qualitative research procedure and result is to "establish a comparison case and seek out similarities and differences across accounts to ensure different perspectives are represented" (Noble & Smith, 2015; p. 35). This action research also equally compared accounts of each participant, and discovered the similarities and differences by conducting charting process in framework analysis. In charting process, researcher sorted out each participant's account and explanation according to corresponding sub-theme, so that researcher could easily compare the similarities and differences. As a result, the findings part could represent different perspective from each participant.

"Data triangulation" is also the method to ensure the truth value in qualitative research by recognizing multiple realities (Noble & Smith, 2015; p. 35). This action research adopted data triangulation method by collecting the data from in-depth interview, research diary, audio

recording and video recording. This multiple data sources allowed researcher to incorporate each participant's different reality and their interpretation.

4.8.2 Consistency

Consistency is associated with trustworthiness of the research (Noble & Smith, 2015). This quality of research can be attained by "leaving a decision trail, so that the reader would be able to track and verify the research process" (Rolfe, 2006, p. 305). Generally, keeping "meticulous record" allows researcher to "demonstrate a clear decision trail" to ensure consistency (Noble & Smith, 2015; p. 35). In this action research, the clear record of all four phases (plan, action, evaluation, reflection) introduces a transparent decision path. The description of plan phase is reported in the sub-chapter 4.6 Procedures of action research cycle and data collection. The process of action phase is narrated in the research findings chapter by demonstrating findings in the same timeline and sequence of actual procedure of research project. The main researcher recorded meticulously the evaluation and reflection after each practice session in the research diary, and co-researchers described their own evaluation and reflection in the in-depth interview. Then, the analytic process of combining and elaborating the whole reflections is demonstrated in the sub-chapter 4.7 Data analysis method, and the result of analysis is narrated in the findings part.

Typically, researchers adopting qualitative methodology also ensures consistency by "demonstrating clarity in terms of thought processes during data analysis and subsequent interpretations" (Noble & Smith, 2015; p. 35). In this action research, retained links to the original data allows researcher to clarify the thought processes of data analysis and subsequent interpretations. The main researcher conducted the data analysis and subsequent interpretations based on the theoretical framework of flow and MPA theory. Individual researchers or readers who become well informed of theories after reading theoretical parts can verify whether the subsequent interpretations of main researcher is valid and consistent or not, since the corresponding original interview transcript data and research diary are described for each subsequent interpretation in the findings part.

4.8.3 Applicability

Applicability indicates “whether findings can be applied to other contexts, settings or groups” (Noble & Smith, 2015; p. 34). In order to ensure applicability, illustrating “rich detail of context” is essential (Noble & Smith, 2015; p. 35). In this action research, the sub-chapter 4.3 Participants as co-researchers of the study provides the rich context. This sub-chapter explains each participants’ trait anxiety level, performance experiences and the type of musical instrument they play. The trait anxiety level is all different from high (Kübra) and middle (Vilhelmiina) to low (Woojung). In addition, the amount of performance experiences differs from each musician, and the musical instruments we played are different. Sub-chapter 4.4 Action research project explains the different music genre we played, describes the characteristics of each song, and the role each musician took to perform.

All these rich details of context ensure the applicability to other music performance projects, since it shows how different factors interacted and affected the dynamics of action research project. For example, if individual singer with high level of trait anxiety and less amount of performance experience wants to sing a popular song, he or she can reference the experience of Kübra and adopt her way of using digital media to promote the flow experience. In addition, if an amateur band consisting of musicians playing flute wants to play the classical music, they can reference the experience of Vilhelmiina and Woojung, even though the music instrument is different. Therefore, other music performance projects having different characteristics can apply the findings according to their similar contexts with this action research.

5 FINDINGS

This chapter describes the result of action cycle conducted by three co-researcher and the analysis of the findings by comparing and contrasting the rearranged data in charts gained from each co-researcher. In addition, this chapter synthesize new knowledge by relating results to the theoretical framework of flow and MPA. Four major themes were selected to describe in an organized and chronological way: MPA for using digital recording device at first, Digital media recording device use, Digital media contents use, and Flow and MPA level right before/during the real performance. In each sub-part, related theoretical aspects and concepts were used to explain the phenomenon and synthesize.

Direct quotations from the in-depth interviews with Vilhelmiina and Kübra were used to retain the linkage to original data. Research diary was also directly referenced to describe the original data from the main researcher.

5.1 MPA caused by using digital recording device at first

As described in methodology part, using media recording device can possibly induce music performance anxiety. When band members and I used media recording device for the first time, Kübra and Vilhelmiina felt nervous and did not want to try recording. Table 6 depicts the level of MPA each participant showed while using digital recording device at first.

TABLE 7. The MPA level for using digital recording device at first during the practice session

Person	**The level of MPA caused by using digital recording device at first**
Kübra (Main vocal)	high- nervous feeling when recording
Vilhelmiina (Violin, Vocal)	high- doubtful feeling of whether recording is helpful, rejecting to listen
Woojung (Piano, Vocal)	really low- suggesting to try recording, a number of previous experiences

In Kübra's case, when I first suggested to use recording device to check what we played, she felt nervous and perceived recording as a negative activity.

> *Let's start from the recording device. At first, just like Vilhelmiina, I was also feeling nervous because it is being recorded. And, whenever you feel like it is being recorded, you always feel like (nervous). So, being recorded, which is kind of a pressure over you … that was like the negative thing at the beginning, what made us anxious. (Kübra, p. 1)*

Vilhelmiina commented that "in her case, recording the playing in the early phase is a pressure (Research diary 2016. 09. 09)". She was also suspicious about whether the use of digital media recorder is helpful or not.

> *And also this recording (device) you borrowed from your friend, I think it was great too. Even though first I was worried like, I was thinking "Is it really good to listen to it afterwards?" … Well, in my mind, because I was doubtful of this recorder, I don't want to listen to it. That's why I wouldn't have done it (recording) myself, even if I would have the possibility (Vilhelmiina, p. 1).*

Also, in Vilhelmiina's case, she felt still nervous on second try of recording as well, when she was physically tired after practicing for a long time.

> *I suggested to record "The Swan" music, but Vilhelmiina did not want to (possibly felt anxious), and she mentioned that she is physically tired because she practiced for two hours before the practice session with me (Research diary, 2016. 9. 20).*

It turned out that both Vilhelmiina and Kübra experienced anxious feeling when I first suggested to record our playing at first. Their reactions are correlated to the causal factors of MPA: Inadequate preparation and Perception of high self-exposure. As stated in the theoretical part, inadequate preparation, low task mastery and difficult repertoire may increase musicians' fear of failure (Papageorgi, Hallam & Welch, 2007). Vilhelmiina and Kübra felt fear of failure and denied using the recording device, because I suggested to use the recording device when we had the third practice session only. They perceived the lack of preparation to record.

Vilhelmiina and Kübra also felt high self-exposure, since they regarded recording as "evaluative performances as opposed to playing for pleasure in relaxed environments" (Papageorgi, Hallam & Welch, 2007, p. 91). Due to these two causal factors of MPA, using digital recording device in the early phase increased the chance for musicians to have MPA. When musicians are afraid of being exposed and deny using the recording device, they lose the opportunity to receive appropriate feedbacks for their weak parts.

As this phenomenon was expected in the planning phase of action research, I, as a researcher and educator, mediated to alleviate the MPA in the following way.

> *After we felt quite satisfied with our song "Words" performed by "Real group", I suggested to record from the middle part of the song with my iphone 5. The reason behind this decision of recording from the middle part was that it gives less burdens and induce less anxiety to other band members. Kübra and Vilhelmiina still did not want to record, because they felt nervous and did not like the idea. So, I had to explain that it is helpful to record when we feel that we are quite satisfied with our music and check. Also, recording from the middle requires lower level of concentration, so the quality of music can be better than recording the whole part (Research diary, 2016. 09.18).*

Nervous feeling did not disappear instantly after implementing the suggestion though. Before checking the recording, Vilhelmiina and Kübra were still much conscious of mistakes they have made. "Right after the song(Words) finished, Kubra mentioned that "Okay, I have made some mistakes." and Vilhelmiina said "Me too"" (Research diary, 2016. 09. 18). Their responses indicate that: 1. They failed to concentrate on singing fully. 2. They counted how many mistakes they made during the performance. According to the study conducted by (Weinberg & Gould, 2014), focusing on the mistakes during the performance makes performers feel less sense of control, and induces debilitative music performance anxiety and blocks the flow state.

The important change of perception toward media use occurred when positive feedbacks were given after checking recordings together.

> *After we recorded, we listen to the recordings together. Then, I intentionally emphasized the positive point of the song we recorded first, because positive feedback can be helpful to have positive attitude toward the recordings. I commented that after the part with no lyrics, we harmonized really well, and it went smooth (Research diary, 2016. 09. 18).*

Right after we checked recording, "Vilhelmiina actually liked what we recorded, and she suggested recording the whole song once again" (Research diary, 2016. 09. 18). "After sharing the feedback and suggestion, Kubra mentioned that "it is helpful to record and check what we are doing. Now, I understand why we need to record"" (Research diary, 2016. 09. 18). It felt achieving that both band members now changed their attitude and perception toward recording.

As stated in methodology part, the third expected result of action cycle "Facilitate the change in participant's perception toward digital media use" was achieved through educational mediations and encouragements. In addition, band member could sustain their changed perceptions throughout the following practices. Kübra wanted to use recording device to find the suitable singing style for herself.

> *Kübra wanted to record several times to experiment the singing style she wanted to try. We tried to play and record four times and at each time, we played what we recorded. After the last recording and checking, Kubra told me that she found the style she wants to sing (Research diary, 2016. 09. 23).*

Also, after using professional recorder H2 zoom which has better quality than iphone 5, "Vilhelmiina mentioned that "she didn't think recording could be this much fun and helpful"" (Research diary, 2016. 09. 28). Enjoyment which is one of the intrinsic rewards is the essential manifestation of flow state (Nakamura & Csikszentmihalyi, 2009).

5.2 How each co-researcher utilized digital recording device

In this subchapter, four common sub-themes which emerged in the in-depth interview and research diary are explained: receiving effective feedbacks, putting into audience's perspective, Freedom from the perfectionism and better concentration, and improving quality of achievement attribution

5.2.1 Recording device allowing players to receive effective feedbacks

Vilhelmiina could find the parts to correct by listening to the recordings and she could especially concentrate on those tricky parts while playing the music.

> *When I heard the recorded things, I noticed that okay, this is the thing I have to correct, and I knew what to concentrate on more. It was clearer than to me what to correct, and I hadn't anxiety what should I do to get it this better. And in the performance, I know what I should do and when I could just concentrate on the performance, and that was the nice part. (Vilhelmiina, p. 3)*

Thanks to recording device, Kübra could find out her mistakes and weak parts, eliminate them and follow her progress. This process helped her to improve her singing skills in a positive way.

> *I mean, from my perspective, it was more helpful to improve what we have done, because you follow up the procedure, you follow your progress. And then on the way, if you see any kind of mistake, any weaknesses, then you are working on eliminating all these mistakes and improving the weaknesses. So positively, after using these media devices, I think especially this recording, professional recording device, I think that it contributed a lot. It helped us to improve our skills in a positive way. (Kübra, p. 2)*

In my case, "personally, I can check my piano playing and it is good to keep listening the recordings, because I improvise to accompany the singer. I can repeat what I played for singers and make the good improvisation remain. (Research diary, 2016. 09. 09)" Also, good quality of recording device also provided important feedback about our breathing timing and helped us to develop our skills further.

> *Thanks to the quality of recording (H2next Zoom-professional recording device), we could figure out that Vilhelmiina and I breathed in at different point. Since we*

> *are singing acapella song and there is no accompanying musical instrument, breathing in at the same moment while singing is really important. Good media device enabled us to receive important feedback to increase our skill which is necessary for singing better. (Research diary, 2016. 09. 28)*

Receiving effective feedbacks (Flow dimension 3) by using recording device is related to the third dimension of flow experience: Immediate and clarified feedback. Since musicians cannot remember all the mistakes or the part to improve while playing, recording device can provide the opportunity to gain meaningful feedbacks to correct the mistakes and develop better skills. Moreover, since gaining immediate and clarified feedback is one of the primary conditions to reach the flow state (Nakamura & Csikszentmihalyi, 2012), using record device for those feedbacks is highly flow-inducible.

5.2.2 Recording device facilitating players to place themselves into the audience's perspective

By checking the records we made, Vilhelmiina could put herself into audience's perspective and find new things to correct which was not discovered by herself before.

> *And also, like I said, I kind of cheer violin when I played it as the others hear it. I heard it like from the audience (perspective). And okay, then I know the different things to correct than when I play myself. And I think that was the great improvement also. I know this okay, this I thought it sounds okay, (but) it doesn't sound when I heard it here so… and I think when you get more professional, you start to think what the audience hear, and then it's nice to have like this kind of help. (Vilhelmiina, p. 3)*

Recording device also allowed Kübra to place herself in the audience's perspective and evaluate our performance more objectively.

> *At the previous one, again we were doing our best, but we didn't know how does it sound. We didn't follow up our progress. We didn't follow our performance, how it would sound like. We didn't witness that. We didn't put ourselves in the place of audience. But, in here, with this one, ah, I mean, with the recording device, we actually put ourselves in a place of audience. And we tried to evaluate objectively. (Kübra, p. 2)*

With the help of recording device, it was possible for Vilhelmiina and Kübra to evaluate objec tively from the perspective of audience. Then, we all could set up the new clear proximal goals to sa tisfy audience based on the assessment we made. Clear proximal goals are important, since it is chal

lenging to become engaged in the performance in which one is not aware of what should be implem ented (Csikszentmihalyi, M. & Csikszentmihalyi, I. S., 1992).

Placing ourselves into the audience's perspective also helped to decrease the dread of having a negative evaluation (MPA factor 1-7). The process of evaluating ourselves objectively allowed us to assume what kind of negative evaluations can be given, and be prepared to avoid them by improving the weak parts we figured out. The improvement we achieved prepared us to be more confident and be less aware of negative evaluations. According to Lehrer, Goldman, & Strommen (1990), fear about audience's response to performance has been proved to affect the anxiety increase. Therefore, freedom from the dread of negative evaluation is correlated to flow state and the best quality of performance according to the relationship between MPA and flow state (Fullegar, Knight & Sovern, 2013).

5.2.3 Recording device providing the freedom from perfectionism and better concentration

The reflection Vilhelmiina gained from recording device enabled her not to care about minor mistakes much, and allowed her to become free from the perfectionism. She also found out that the atmosphere is the most important thing to concentrate while playing the music.

> *Ah I couldn't do it so much, I tried to do it. But, I think with this project also, this has gone way ahead also because of this(recording device). Because I could hear from there, okay it's nothing if there is one mistake. It's the whole thing and in the atmosphere, I was actually the atmosphere was the biggest thing I hear from there(recordings). I wanted to concentrate more like the atmosphere. (Vilhelmiina, p. 4)*

Great quality of recording also enabled me to concentrate better on the performance, because I did not need to try to figure out the mistakes, remember them, and give feedback to other members after playing.

> *While recording, I could concentrate more on musical expression and playing music itself, since the record with professional recording device could preserve and replay the same quality of live performance. Therefore, I could be more fully engaged in playing. (Research diary, 2016. 09. 28)*

According to Mor, Day, Flett, & Hewitt (1995), "self-oriented perfectionism" such as focusing on minor mistakes is related to high level of debilitative MPA (p. 1). Wilson and Roland

(2002) also described that a tendency to have considerable concern over minor mistakes can cause debilitative MPA.

Vilhelmiina and I could concentrate not on minor mistakes, but on musical atmosphere and our playing itself during the practice with the help of professional recording device which can contain how musical atmosphere is promoted. As a result, we both could concentrate on the performance at hand better. In other words, professional recording device promoted the concentration on the task at hand by helping us to center our attention on a limited stimulus field: expression and atmosphere (Hart & Di Blasi, 2013). The fifth flow dimension "concentration on the task at hand" is the important indicator of flow experience (Nakamura & Csikszentmihalyi, 2009).

5.2.4 The use of recording device to motivate- quality of achievement attributions

For Vilhelmiina, listening and comparing the first and the last recording files we recorded during the practice session were helpful to figure out how much improvement we achieved throughout the practice on the same day. This process motivated her considerably.

> *Maybe, you add this. When we recorded 10 times one song, and then we just compared to the first one and the last one. And we noticed the difference between the one(first) and the tenth. Not the everyone of them, but just difference and this was very motivating for us… Otherwise we could have forgotten what it was like in the first time. (Vilhelmiina, p. 7, 8)*

I could gain the feeling of motivation and achievements by comparing the first and last recording files during the practice session and noticing improvements of the quality.

> *We recorded four times and we regarded the first & last one better than the second & third one. After we finished recording, I asked to other band members which record they want to listen first, then they answered the first one. When we listened to the first record, all of us, Kubra and Vilhelmiina and I could listen to our minor mistakes, and we were not that satisfied. However, when we listened to the last record, we noticed that we developed and improved our quality of performance better than the first one. Then I told other band members that let's maintain like this and gradually make it even better. (Research diary, 2016. 09. 30)*

Comparing the first and last recording and realizing how much improvement we made allowed us to become more motivated to invest more effort until the next practice session.

Papageorgi (2007) states that musicians susceptible to debilitative MPA tend to attribute failure internal causes (e.g. low ability, lack of efforts). On the other hand, according to Weiner (1985), when individuals attribute their successful events to internal, controlled, stable causes such as effort and motivation, they have a positive expectation to the future tasks, which allows them to

have higher chance to experience flow and reduce debilitative MPA. Using recording device to compare the first and last recording allowed us to attribute our improvements in a natural way to our effort of practicing patiently.

Kubra also realized that a high level of motivation (internal and stable cause) increase the quality of performance from checking recordings. Therefore, in the natural way without noticing, she could also attribute her success in performance to internal cause, and discovered the way to achieve flow experience.

> *And also, from my personal singing experience, I noticed that whenever I was having higher motivation, I was doing well, I saw it from the recordings. So, I noticed that it is indirect proportion to my motivation in terms of my singing experience. So, this recording device actually made me realize this. (Kübra, p. 1)*

5.3 How each co-researcher utilized digital media contents (e.g. YouTube videos, MP3 files)

In this subchapter, two common sub-themes which emerged in the in-depth interview and research diary are explained: Checking the right rhythm, melody and suitable style and Creating own style by gaining ideas.

5.3.1 Checking the right rhythm, melody and suitable accompanying style

Vilhelmiina (Violin, vocal) watched YouTube videos for the song "Words", and "it was really helpful to listen to them and get the rhythm right and melody right, and sing with them also. And copy them also. (Vilhelmiina p. 1)"

In Kübra's case, YouTube videos helped her as reminder, memory stimulator and motivator. Watching YouTube videos for the music allowed her to remind the right rhythm, melody and details she needs to remember for the song.

> *Okay, in my case, first of all, I should notice that we are not professional musicians, so because of this reason, we are not spending our (whole)day and time by rehearsing. We are students, we have other obligations and we rarely meet. And in such an environment, of course since you have too many things in your mind, I think somehow since you are not focused too much that day, I mean densely, you forget the rhythm, you forget the details you need to know, you need to memorize with, I would say. For me, every time, at the beginning of rehearsing our songs first time in the day when we were rehearsing, it really helped me to remember all these rhythms that I need to remember, let's say. So, it was working for me like a memory stimulus. For me, it was like that. (Kübra, p. 2)*

> *So, I can say that it was quite helpful, especially again, in this acapella. it was like the must for us. Before rehearsing, every time, every time, you catch the rhythm, and the details that you need to remember. For other songs, again, I think it was important for me to listen also. It was memory stimulus. (Kübra, p. 2)*

I gained musical references about accompanying style of piano from different YouTube videos playing the same music. Depending on the stage and the purpose of the concert, the style of accompanying was different and it was helpful to look for differences between videos.

> *And in my case, because I was playing the piano and accompanying the piano, accompanying singer with the piano, so I arranged my piano playing by referencing some videos, because there are some different style of playing in different time. Actually, even though the singer is same, in different stage, they use different type of accompanying style. So, it was quite helpful for me. (Vilhelmiina, p. 2)*

All three of us could find and remind the right melody, rhythm or suitable accompanying style with the help of digital media contents. At first, our skill sets for each music were not matured and we struggled to play the right rhythm and melody. Also, it required the effort to find the suitable and satisfying accompanying style. However, media contents allowed us to match our skill level to the one that the challenging piece of music demands.

Matching the balance between skill and challenge (Flow dimension 1) is the most important factor to promote the flow state and the best quality of music performance (Csikszentmihalyi M. & Csikszentmihalyi I.S., 1992; Jackson & Eklund, 2002). According to the four channel flow model (Yung, 1997), high level of skill and high level of challenge induces the flow in the highest chance. Hence, choosing the challenging music piece is necessary to enter the flow state, and it demands musicians to develop their skills higher if it is necessary. In this case, digital media contents plays an important role to develop musicians' skills to be matched with the challenge.

5.3.2 Gaining the ideas of arrangement and creating our own style

Listening YouTube video allowed Vilhelmiina to realize that as a band, we need to come out of the box already present in original songs and have our own style.

> *Yeah, also I think it helped me to notice you can have your own style even though there is some other style in YouTube, because as a band, we have to have some different style. We are not so many as them. But I noticed okay it's okay to have different than the original one sometimes. (Vilhelmiina, p. 6, 7)*

Also, Kübra found rhythms she wanted to imitate from YouTube videos. Then, she refused to limit herself to only mimic the same style in the video, and she arranged, adjust and improvised her style based on the ideas she attained from the YouTube vidoes. Finding new musical arrangements led her to create the new style she wants.

> *I was trying to especially focus on the rhythms I liked very much to imitate, but not strictly being bounded to that too. We made our own arrangements as well. (Kübra, p. 2)*
> *Again, we were very creative I think. There was time that we just didn't like the notes of chords of sheets. And we just wanted to produce our own (according to) how we like, how we think that it sounds better … So, actually, we did this improvements, arrangements according to the videos that we listened and watched. And there were also times that we independently (arranged) according to our likes. We improved and made our own arrangements creatively. (Kübra, p. 3)*

I realized that elaborating ideas with band members was interesting and motivating for us. New arrangement that was decided during that elaboration also increased the quality of our performance.

> *So, it's also like getting some ideas from YouTtube video, and then elaborating itself is quite motivating us, and interesting, (the practice is) getting more interesting. And I think it's also the process of like increasing the quality of our performance. (Vilhelmiina, p. 3)*

YouTube videos encouraged all three of co-investigators to explore, improve and elaborate the new styles to define our own style creatively. The process of defining our own style of music provided the intrinsic motivation to practice harder according to the new style. Also, playing our own style of music enabled us to enjoy playing the music itself.

Intrinsic motivation and enjoyment we experienced are associated with the ninth flow dimension: autotelic experience. According to Hart & Blasi (2013), musicians entering flow state experience strong sense of enjoyment by being aware of intrinsic values from their experiences. This deep pleasure leads musicians to keep seeking the better quality of performance, because they desire to feel more intense pleasure from autotelic experience. Finding own music style of arrangement and play with the help of digital media contents can maximize the chance to have the intrinsically rewarding experience.

5.4 Description of each musician's MPA and flow experience right before and during the real performance.

This subchapter describes the level of flow and MPA that each musician experienced right before and during the real performance for each music: Swan, Hero, Words, and You've got a friend. Before describing the actual performance, the mindset of Vilhelmiina and Kübra right before the real performance is depicted first.

Unlike previous experiences feeling MPA, Vilhelmiina was confident of herself to be able to concentrate on playing fully in the actual performance. She also retained the insight that it is okay to make some little mistakes and it allowed her to be free from perfectionism.

> *When I was going to concert, my friends asked me if I'm feeling nervous or anything. I didn't feel like at all this kind of anxiety I used to (have). I just know when I'm on the stage, I can concentrate. And when I was there, I think it was like perfect flow even though maybe there were some little mistakes. But, I still thought when I was in the performing, (that) it is more important for audience to have like this experience of flow also than to like. They don't give so much thoughts to one mistake or something. I think also this band project helped me to see it this kind of point of view. (Vilhelmiina, p. 3, 4)*

As Vilhelmiina mentioned in the interview, the action research project helped her to avoid the perfectionistic point of view. Therefore, Vilhelmiina could have an intense emotion that she is fully prepared to enter the flow experience in the actual performance.

Unlike Vilhelmiina, Kübra had difficulties in concentrating on playing solely since she was distracted from handling multiple tasks at one time. Managing our schedule and technical things deprived her from the chance to relax herself before the real performance.

> *We need to make sure that everything is ready before the actual performance. I think that feeling also affects your state of mind a lot. You are full of… you have full of pressure of arranging things, technical things. And then, you don't have any time to relax yourself before the performance. So, we need to make sure that all those technical things and the venue everything is settled down, days before the real performance, so that we don't any kind of varies about. (Kübra, p. 7)*

Unsatisfactory microphone and speaker system also made her disappointed and demotivated. Since she was the main vocal, her mind was affected most intensely by the poor microphone and sound system.

> *I wasn't happy with microphone, and all those speaker equipment. I was a bit disappointed… So, I was feeling like it is not going to be as we wished from the beginning. So, it was like demotivation a bit, and it affects. (Kübra, p. 6, 7)*

As Kübra became demotivated by poor sound system, unsatisfactory performance conditions are factors which cause debilitative MPA (Papageorgi, Hallam & Welch, 2007).

Close distance between audience and singer and brighter lighting made Kübra feel more exposed to the audience.

> *The point is I think the placement of audience. The environment was quite different. In the first one, it was a huge place, and the audience were sitting a bit distant. And the room was darkened. So, somehow you feel much better than this one (Laterna performance). This one, you are more with.. the environment was like a restaurant environment. Even though we had a distance (from audience) which we were happy with, still it wasn't the same. I mean it was like more closer to the audience. And lighting wasn't that much darker. (Kübra, p. 5)*

Wilson (1997) states that the stronger sense of self-exposure musicians feel, the more chance they have to experience debilitative MPA. More intense self-exposure than the previous performance made Kübra feel anxious before the actual performance started.

Now, the following table depicts whether each musician had MPA or flow state for each music, and how strong they had felt.

TABLE 8. The flow and MPA level of each musician for each song.

Name/Song	Swan	Hero	Words	You've got a friend
Kübra	N/A	MPA (High)	MPA (Low)	Flow state (High)
Vilhelmiina	Flow state (High)	MPA (Low)	Flow state (High)	Flow state (High)
Woojung	Flow state (High)	MPA (Low)	Flow state (High)	Flow state (High)

5.4.1 Swan

When Vilhelmiina and I played swan, both of us "could concentrate on the music in the better level compared to the level we had during practices. She mentioned that she felt flow experience definitely"(Research diary 2016. 10. 13). Vilhelmiina also think "it is because we have now better concentration, at least for me, I can concentrate even (in) the slower tempo. (Vilhelmiina, p. 5)"

From the actual performance video, it is discovered that while I was playing the piano at first before she joins, Vilhelmiina slowly concentrate on the playing more and more by reviewing how to do vibration (Park, 2017). As Vilhelmiina mentioned, she realized before where she needs to focus on and implement it in the actual performance. It helped her to enter the flow state easily.

From Kübra's perspective, "it sounded maybe even better than the ones in rehearsal, or equal to the one, equal to the best version in the rehearsals, so to say" (Kübra, p. 4).

5.4.2 Hero

Kübra felt like her body became frozen and something is pressing her down. She felt more nervous than she felt during the rehearsals.

> *You told me that you read articles about it, and those articles, it was writing like in the real performance time, usually people feel nervous, and you have a tendency to play and sing faster. I felt that nervous feeling. And I wasn't relaxed as much as I was in the rehearsal. So, I think and my anxiety description would be like your whole body, this is what I feel. Your whole body feels like frozen. Only you, you vibrate your voice. So, there is like a pressure. Something is pressing you like this. And then, of course, it wasn't… the feeling that I had wasn't the same, I mean in the rehearsals and the real performance. (Kübra, p. 3)*

She was not satisfied the microphone, speaker and sound system in Laterna in general. This affected her to be disappointed and demotivated, and these negative emotions combined with the nervous feeling derived from the presence of audiences.

> *Yes, yes. So it was just echoing in my mind, when I started the hero: "It's not going to be the best, it's not going to be the best." Well, microphone doesn't sound nice as we wished. We couldn't manage to arrange the one, I mean, that mixing board that has the echo effect. So, I was kind of disappointed, demotivated, and I was also a bit having some nervous feelings because of this, and also the audience, everything mixed up. Yeah… (Kübra, p. 7)*

When Vilhelmiina realized that she couldn't hear Kübra's voice well, she started thinking whether she should play louder to encourage her or play quieter to harmonize better. Because of this unexpected incident, she could not concentrate fully on playing the music.

> *Actually, I was thinking when I heard I didn't hear her(Kübra) well, I was thinking "Is she nervous?" or something. Then, I was beginning to think "okay, when someone is nervous, is it helping when someone is like encouraging? Or should I like play more loud? But, I cannot, because if I'm playing more loud, then audience will not hear Kubra, so it was like that you couldn't concentrate. (Vilhelmiina, p. 5)*

In my case, after I noticed that the volume of Kübra's voice is low because of the low setting of microphone volume, I could not concentrate fully. Poor concentration level caused me to become passive and try to be safer to improvise.

> *So, you couldn't concentrate. I couldn't concentrate either. The moment she started singing, I noticed "Ah, the mic sound, the volume is not enough." So,*

> *actually, I wanted to stop at that moment, and then start once again, but I couldn't. It could be better decision to stop there. (Vilhelmiina, p. 5)*
> *When Kübra started singing, I noticed that the volume of her voice is not big enough.... Since I was thinking about what I should do with the smaller volume, I became distracted and passive to improvise. Therefore, I improvised the piano accompaniment more safely, and the quality of piano accompaniment became little bit worse. (Research diary, 2016. 10. 13)*

After we set up the microphone and sound system for our performance, another musician had the rehearsal and set up the microphone system for himself. Then, we did not think about setting up the system back to our own one, before we start to play Hero. Since Swan was music instrumental music, so microphone system did not affect that much.

Low volume of microphone affected all three of us in a negative way to hinder us from concentrating on playing itself. This phenomenon is associated with one of the debilitative MPA factor: Unsatisfactory performance conditions.

5.4.3 Words

Kübra did not feel completely comfortable when we performed Words compared to the rehearsal, but she perceived that the performance went smoothly.

> *Words, um... I think we managed that too, even though we weren't that again completely comfortable, as we were in the rehearsal. But, everything went smoothly. We did our best and nothing wrong happened after all… all those repetitive rehearsals that we had. (Kübra, p. 3)*

Vilhelmiina liked the performance of Words very much. "It was easy to concentrate on there. I think it was part of because we listened the version in YouTube before we got into the mood. (Vilhelmiina, p. 6)"

I entered into flow state while performing Words "and I think when I was singing words, when we were singing words, I was kind of hyped up" (Vilhelmiina, p. 6). Also, "since I creased the volume of all three microphones we use, I could notice that our voices are delivered well enough. So, I could focus on the performance better and enjoyed singing" (Research diary, 2016. 10. 13).

5.4.4 You've got a friend

For Kübra, "You've got a friend" was the most successful performance, and she felt comfortable and enjoyed the performance. Enjoyment is the important indication for flow experience, which is connected to ninth dimension autotelic experience (Nakamura & Csikszentmihalyi, 2009).

> *You've got a friend was very successful I think, maybe the most successful one, because you corrected the microphone voice level. And you played very well, Vilhelmiina accompanied of course very well, everything was just great. … Ok, I can say that I enjoyed the last one(You've got a friend), which I felt completely comfortable. (Kübra, p. 3, 4)*

From the actual performance video, it is also discovered that Kübra obviously started enjoying the performance itself after 1 minute passed. From the moment of singing with Vilhelmiina, Kübra started smiling and enjoyed (Park, 2017).

For me, also the performance quality of "You've got a friend" was the best. The concentration level during the performance was even higher than the one during the practice sessions. High concentration level is one of the major manifestation of flow (Csikszentmihalyi, 1996).

> *Since we already checked the volume of the microphone is okay, so I could concentrate on fully. The performance quality was the best one since we could concentrate on even better than when we practiced. (Research diary, 2016. 10. 13)*

6 DISCUSSION

The discussion part presents the whole evaluation of expected results of the action research cycle. It is essential to evaluate the answers for the research question, and in this action research, the answers can be provided with the evaluation of results from the action cycle we conducted.

Based on the findings part, I evaluated whether the action research cycle achieved the six expected results; Find and internalize the proper digital media use to promote the best performance, Understand and improve the researcher's practice, Facilitate the change in co-researchers' perception toward digital media use, Play the best quality of music in the real performance, and Elaborate the action cycle and share it with other researchers.

6.1 Find and internalize the proper digital media use to promote the best performance

Co-researchers and I could figure out six ways in common to use digital media to promote the best music performance. Six practical ways were associated with five different flow dimensions and three different causal factors of debilitative MPA.

The use of digital recording device to receive effective feedbacks for musicians was supported by the third flow dimension 'immediate and clarified feedback'. The use of digital recording device to put musicians into the perspective of audience was proven by the second flow dimension 'clear proximal goals' and the causal factor for the debilitative MPA 'sensitivity to evaluation by others' (3.3.2.1-(7)). The third use of digital recording device to set free from perfectionism and concentrate better was associated with the debilitative MPA causal factor 'perfectionism' (3.3.2.1-(4)) and the fifth flow dimension 'concentration on the task at hand'. The last common use of digital recording device to improve the quality of achievement attributions was related to the debilitative MPA causal factor 'quality of achievement attributions' (3.3.2.1-(8)).

The use of digital media contents to check the right rhythm, melody and suitable accompanying style was supported by the first flow dimension 'challenge-skill balance'. The

second use of digital media contents to gain the ideas of arrangement and create our own style was proven to be effective by the ninth flow dimension 'autotelic experience'.

Unfortunately, poor quality of microphone and speaker system at the stage acted as a causal factor 'unsatisfactory performance conditions' which caused the debilitative MPA, especially when performing "Hero". However, it provided the lesson that it is necessary to check and prepare the good quality of sound system at the stage in advance.

Even though our musical instrument (Vilhelmiina- violin, Woojung- piano, Kübra- vocal), trait anxiety level, previous performance experiences and many other things were different, we could figure out and master the common effective ways to use the digital media. It indicates that these common ways can be effective and useful for us and other musicians.

6.2 Understand and improve the researcher's practice as a media educator

By conducting the action research with other co-researchers, I could gain insights which I would have not been able to attain by myself. Since I do not have the experience to play the violin, it was helpful for me to gain insights of violin player Vilhelmiina. For example, Vilhelmiina realized that her vibration style sounds like being nervous after she attained feedback from recording files. Her teachers emphasized it before, but she did not take it seriously before she found out by herself through recording. After the realization, she fixed her vibration style and she succeeded well.

> *I think so too. I think this device was very helpful to take the atmosphere. Because I even heard when I'm doing the vibration, in there, I hear it is too like, it sounded like nervous. So, I was like "okay I don't want this feeling." And then I started to be like "Okay, I'll try to be like more relaxed." and I think it succeeded pretty well in the end. In the end, when we played slowly, it wasn't like some nervous vibration, or just something I think natural…. Because my teachers have told me to alter this time, and not doing it like a mechanical thing. But, I couldn't hear myself so well, what is good and what is not good. Now that I heard it, and now somehow I learned it, what they said for me. (Vilhelmiina, p. 8)*

Thus, for Vilhelmiina, the feedback from recording device was more effective to help her to realize the possible improvements than the feedback from teacher, since she could feel the need to improve by herself through listening to herself. I would have not been able to realize by myself the usefulness of recording device Vilhelmiina experienced.

Apart from the findings stated in the previous part, as a media educator, I also realized the important perspective of media use: communicating through sharing YouTube videos. While co-researchers and I were practicing, we often discussed how to change arrangement or style based on YouTube videos. One time, Kübra suggested that she wants to sing the specific part more softly and emotionally rather than strongly while she was showing us the original video in which the singer sings that part strongly. It helped us to understand the difference she wants to make better. Here is another example between Vilhelmiina and I.

> *However, after practicing, we were quite satisfied with our performance of "The Swan". Then, we discussed how Vilhelmiina improved her skill and how she created nicer vibe this time. She said that she listened to one YouTube video and tried to mimic the playing style in the video. Therefore, I asked her to send me the link of that video, so that I could understand the style and vibe of the music in the video and accompany Vilhelmiina in the same vibe.*
> *Sharing the YouTube video to create the same musical vibe was rather new point I did not think before. Since communicating verbally about the musical expression has its limitation, communicating with examples in media contents can share the opinions more accurately and effectively. (Research diary 2016. 09. 20)*

Communicating with band members about musical expressions and style by sharing YouTube videos enabled me to realize that digital media contents can be more effective medium than verbal communication when it comes to musical communication.

Implementing the action research also allowed me as a researcher to know how to apply theoretical knowledge to the practice (Franco & Lisata, 2004). The process of reflecting the results and co-researchers' experience with selected theories also helped me to understand the construct of theory itself more thoroughly.

Therefore, I could gain meaningful insights and improve my practice as a media educator with the help of co-researchers and implementation process.

6.3 Facilitate the change in co-researchers' perception of digital media use

As described in the findings part 5.1, co-researchers had a negative perception of using digital recording device at first. Vilhelmiina and Kübra was reluctant to use recording device, since they felt anxious to check the recording. However, through main researcher's mediation to record from the middle and positive feedbacks, co-researchers' attitude started to change. Moreover, throughout the practice session and real performance, they totally changed their negative perception to the positive one by finding the way of using media device and contents in their own way.

Kübra mentioned that digital recording device was helpful to improve skills and eventually the quality of our music.

> *Okay I should say that this is our second performance. In the first performance, we didn't use any kind of device, recording device. And I think this one was much better. I mean, from my perspective, it was more helpful to improve what we have done. (Kübra p. 2)*

> *In our first performance rehearsals, we were using YouTube. Ah, maybe not that very often. But, still we were using it. And we weren't using recording device, and I saw the difference of making your performance much more quality and improving your skills. (Kübra p. 8)*

In Vilehlmiina's case, her changed perception maintained after the action cycle finished. Vilhelmiina mentioned that "By the way, I have to tell you that nowadays I use my phone to record my practicing when I sing. I think it is partly because of your record experiment, because now I'm used to idea of record and listen to my practicing." through whatsapp messenger on April 14, 2017. Therefore, the result of facilitating the change in co-researcher's perception revealed as a highly successful one.

As mentioned in justification of overall methodological approach part, the researcher and participants in the action research project gains the biggest benefits from the project implementation (Cain, 2012). Co-researchers changed attitude and view toward media use are the biggest benefits they gained through this action research project, because they are now willing to use the digital media and develop the way of using further for the future performance to reach the flow state.

6.4 Play the best quality of music in the real performance

As described in the finding 5.4 Description of each msucians' MPA and flow experience, Vilhelmiina and I could concentrate on playing fully except for "Hero" due to the volume of the microphone. For other three songs, Vilhelmiina and I could enter the flow and enjoy the performance itself. Vilhelmiina mentioned that she knew what she needs to do (related to second flow dimension "clear proximal goals"), and she could just concentrate on the playing (related to fifth flow dimension "concentration on the task at hand").

> *I think so, because um, when I heard the recorded things, I noticed that okay, this is the thing I have to correct, and I knew what to concentrate on more. It was*

> *clearer than to me what to correct, and I hadn't anxiety what should I do to get it this better. And in the performance, I know what I should do and when I could just concentrate on the performance, and that was the nice part. (Vilhelmiina p. 3)*

In Kübra's case, it needs to be in the consideration that her trait anxiety level is high, and it affected her performance in a negative way.

> *You or Vilhelmiina told me Adele was also like that, even though she doesn't show it. I'm like Adele. I don't show it much, but in my inner side, there are turmoils. And, yeah, sometimes it has nothing to do with being on the stage (Kübra p. 6)*

Poor microphone and speaker system affected Kübra most negatively, since she is the main singer relying on that system most. However, she still could enter the flow state when performing the last song "You've got a friend". It was possible for her to enter, since she changed her mind-set and be ready to concentrate.

> *At first you start with those feelings, but then you motivate yourself "Well, I have to do my best with what I have at the moment." And you get used to it at the stage. Everything stabilizes, and your level of anxiety. So, I think it's okay (Kübra p. 8).*

Despite of the poor microphone and speaker system, Vilhelmiina, Kübra and I could experience the flow during the real performance. Utilizing digital media contents and devices as described in the findings part helped all three of us to be able to play the best quality of music in the given condition and environment. However, preparing and arranging better quality of microphone speaker system could have enabled us to enter the stronger flow state.

6.5 Elaborate the action cycle and share it with other researchers

As described in the finding 5.4, handling multiple tasks at the same time right before the real performance distracted Kübra's mind and concentration. Poor microphone and speaker system demotivated her severely as well. Kübra mentioned that:

> *First of all, I wasn't happy with microphone, and all those speaker equipment. I was a bit disappointed and … you are always leaving this to the end, I thought this is something that we need to sort out at the very beginning. This is like even more important than our efforts to do all those rehearsals I think. (Kübra p. 6, 7)*

As Kübra suggested, arranging the best quality of microphone and speaker system on the stage should be included in the planning phase of action cycle. Since unsatisfactory performance

conditions can cause the debilitative MPA, great quality of stage setting is closely associated with the quality of music performance (Papageorgi, Hallam & Welch, 2007).

6.6 Contribution to elaborate the MPA and flow theory

As explained in the finding 5.1 “MPA caused by using digital recording device at first”, this action research implies that using the digital media recording device can cause the debilitative MPA. Even though many other causal factors has been discovered, using a digital recording device has not been studied as a causal factor of debilitative MPA.

Most of the research about MPA has been conducted in the setting of stage performance and professional music school. The object of those studies was mainly to produce or develop MPA scales or useful methods for professional musicians and students who want to become professional (Hoffman & Hanrahan, 2011; Barbeau, 2011; Osborne, Kenny & Holsomback 2005; Spahn, Walther & Nusseck, 2016; Bissonnette et al., 2016). Since the studies have focused on stage performance and professional level musicians, it has not been attractive for them the phenomenon that the use of recording device in the beginning can increase the anxiety of musicians.

For amateur musicians and young aged students who are in the elementary or middle school thinking about becoming a professional musician, using digital recording device for the first time can create the negative spiral of feeling anxious. According to Papageorgi, I., Hallam & Welch (2007), high arousal levels during the performance can cause uncontrollable physical/mental activation and hinder the concentration. This negative experience lead musicians to have negative self-feedback after the performance, and lower the self-esteem of musicians. As a result, the possibility for failure in the future performance increases. Therefore, the implication this action research produced will be helpful for individual who use the digital recording device in the early phase of their musical activities, not to initiate the negative spiral of debilitative MPA. Scholars and researchers can also study further to discover the other impact of using digital recording device to the flow state and MPA.

This action research also can possibly suggest the negative correlation between the debilitative MPA causal factor “perfectionism” and fifth flow dimension “concentration on the task at hand”. As we can see in the finding 5.2.3 “Recording device providing the freedom from perfectionism and better concentration”, Vilhelmiina and I could avoid having perfectionism with

the help of professional digital recording device, and as a result, we could concentrate on the performance at hand.

Until the present time, Fullagar, Knight & Sovern (2013) discovered the relationship between the debilitative MPA and flow state when it comes to the first flow dimension "challenge-skill balance". Well-matched challenge-skill balance promotes flow experience, whereas poor balance between challenge and skill causes a debilitative MPA. Likewise, this research suggests the relationship between the debilitative MPA and flow state in terms of perfectionism and concentration. Having perfectionism hinders musicians from concentrating fully on the task at hand, leading to experience the debilitative MPA. On the other hand, the freedom from perfectionism encourage musicians to concentrate fully on the task at hand, leading to achieve the flow state.

The new implication can be beneficial to clarify and understand the relationship between MPA and flow state more clearly. Scholars will be able to base their research on this implication and study further to prove and help musicians who suffers from the debilitative MPA.

7 CONCLUSION

Media education or media literacy research on music has not been conducted until the millennium era (Chung, 2007). Even though some of music education studies have explored the use of technology in music classes for composing, better knowledge acquisition and online community of practice, these studies have been conducted from the perspective of music education (Ö ztosun, 2016; Pećanac, Jeremić & Milenović, 2016; Croft, 2007; Challis, 2007; Jennings, 2007; Albert, 2015; Partti & Karlsen, 2010).

From 2007, the critical media literacy research has been conducted to analyze the hip-hop music video contents and music lyrics (Chung, 2007; Robillard, 2012; Flynn et al, 2016; Kelly, 2016). The negative impact of sexually explicit visual contents which influence students to have distorted gender role has been discovered by researchers (Chung, 2007; Robillard, 2012). Moreover, the debilitative influence of hip-hop music lyrics which strengthen the tendency of sexual objectification has been researched as well.

However, the media education research on music conducted from the empowerment perspective is lack of both quality and quantity. In order to fill this research gap, this action research tries to solve the research question of how to use digital media for the best quality of music performance. As stated in the literature review part, music performance is closely related to musician's motivation, confidence and identity (Challis 2007; Partti & Karlsen, 2010). When musicians become confident about their performance quality, they will be more likely to be empowered to share their performance video and audio files through the online community. Thus, knowing how to use digital media for the best quality of music performance is significantly helpful for musicians and young students to be motivated and reveal their musical identity.

Theoretical framework of flow and MPA theory have adopted to formulate an action research cycle, promote the better implementation of action cycle, analyze the data and validate the findings. By conducting the action cycle with band members as co-researchers, I as the main researcher could gain qualitative data set, such as in-depth personal interview, research diary, audio recording files and video recording files. Since, band members participated the action research as co-researchers, in the in-depth interview, they could provide their insights which are already reflected and interpreted

by themselves. Then, framework analysis method was adopted and revised according to the characteristics of this action research to analyze the data sets.

This action research discovered the useful ways to use digital media to promote flow state and reduce the debilitative MPA, which leads to have the best quality of performance. Using digital media recording device can provide “immediate and clarified feedbacks (Flow dimension 3)” to promote the flow state. Musicians also can place themselves to the audience’s perspective with the help of digital recording device, so that they can set up the new “proximal goals (Flow dimension 2)” to satisfy the expectance of audience. Digital recording device also set musicians free from the “perfectionism (MPA causal factor 3.3.2.1-(4))”, therefore they can have better “concentration on the task at hand (Flow dimension 5)”. Using recording device to compare the first and last recording allowed co-researchers and I to realize their improvements, which allowed us to attribute our improvements in a natural way to our effort of practicing patiently. Therefore, “the quality of achievement attributions (MPA causal factor 3.3.2.1-(8))” has been improved.

Using digital media contents to check the right rhythm, melody and proper accompanying style provided the chance for research participants to improve their skill, so that they can achieve “challenge-skill balance (Flow dimension 1)”. Digital media contents helped band members to gain the rich ideas of arrangement and create our own style, which promoted the “autotelic experience (Flow dimension 10)” that we feel enjoyment and internal motivation from playing the music itself.

Our debilitative MPA experience caused by poor quality of microphone and speaker system and reduced volume of microphone provided the lesson that we need to prepare the good quality to sound system at the stage in advance, so that we can guarantee the flow state.

The rigor and credibility of this action research is well described in the sub-chapter 4.8 Rigor and credibility of the research. However, this action research still has certain limitations to be addressed. Due to characteristics of the action research and qualitative data collection, the small amount of sampling is unavoidable. In addition, the research setting of conducting a music performance as a band limited the size of samples even smaller. Therefore, there is the limitation for this research to include all the dynamics and interaction between musicians in different contexts.

The limited number of action cycle implementation also needs to receive an attention. Although investigator and data triangulation methods which researcher utilized can increase the validity of findings and interpretation, the researcher can prove the findings as scientific knowledge more strongly when the same action cycle is conducted several times. Cain (2012) explains that action cycle needs to be maintained over a certain period of time in order to “achieve depth to the

research" (p.418). This indicates several cycles of the whole process of action research. However, this action research conducted only one cycle.

Last, limited span of music genre/musical instrument should be mentioned. Although three co-researchers playing different musical instrument managed to discover the common useful methods to utilize digital media, the musical instruments we used are limited to three: violin, piano and vocal. The music genre was also limited to classical music and pop music.

Researchers can conduct further studies to overcome these three limitations. Even though the small amount of sampling is inevitable, implementing the action research with many different bands or musicians can increase the quantity of samples. While conducting this action research, researchers can implement several cycles for each band or musician. Last, conducting this action research with various bands and musicians can widen the span of music genre and musical instrument. Through implementing several action research cycles with a number of musical bands or musicians, this action cycle will be able to achieve its increased depth to be scientific.

As mentioned in the discussion part 6.6 Contribution to elaborate the MPA and flow theory, scholars can conduct research to clarify the impact of using digital media recording device in the early phase. Further studies of the relationship between perfectionism and concentration on the task would be valuable for musicians regardless of their age, skill level and career.

By reading this action research thesis, media educators and music educators can motivate students to achieve the best quality of music performance by using digital media properly. Educators can be aware of the possible debilitative MPA when students use the digital recording device for the first time, and mediate by using techniques, such as providing positive proper feedbacks and recording not the whole part to reduce the cognitive loads. Educators can help music students to gain the full benefits of using digital media when they practice and perform to create the digital music contents, so that they can fully enjoy the whole process and enter the flow state whenever it is possible. Amateur musicians and music students can also implement this action cycle by themselves, so that they can achieve the best quality of music performance, and upload their performance audio or video file to the online community.

17 years ago, the British musicologist Cook (2000) stated that "deciding what music to listen to is a significant part of deciding and announcing to people not just who you "want to be" ... but who you are" (p. 6). In the same way, deciding what music to play and playing that music confidently is an essential part to reveal who we are to others. As discovered in this action research,

recording video or audio file needs courage to implement for amateur or young musicians. Thanks to the findings and practical knowledge of this action research, more amateur musicians and students will be able to overcome their nervous feeling to record for the first time, and reach the best level of their performance. Eventually, media educators, music educators, amateur musicians and students can work together to enjoy the music practice and performance itself, and express their musical identity by showing who they are as musicians.

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